OWENS RIVER WATER TRAIL

Draft Environmental Impact Report
SCH No. 2018051049

Prepared for
County of Inyo

May 2019

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EXECUTIVE SUMMARY

This chapter of the Environmental Impact Report (EIR) is prepared pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15123, which requires that an EIR include a summary of the EIR that contains a brief description of the project and the project actions; an identification of potential significant effects and proposed mitigation measures or alternatives that would reduce or avoid those effects; a description of the areas of controversy known to the lead agency; and identify issues to be resolved.

Project Location and Setting

The project area is located in the Owens Valley, which is nestled between the Sierra Nevada mountain range on the west and the Inyo and West mountain ranges on the east, along an approximately 6.3-mile segment of the Lower Owens River immediately east of the unincorporated town of Lone Pine shown in **Figure ES-1,** *Regional Location.* More specifically, the project would encompass the stretch of river between Lone Pine Narrow Gauge Road and Highway 136 [California State Route (SR)], as shown in **Figure ES-2,** *Project Location*.

The project area is largely a natural setting and is owned by the Los Angeles Department of Water and Power (LADWP). Dominant floodplain vegetation includes saltgrass meadow and tree and shrub willow woodland. Large woody debris (LWD), resulting from the natural loss of limbs and trees in the project area, occupies the channel and can snag floating vegetation creating floating mats, islands, and occlusions. A number of informal roads parallel the river on sandy, chalky bluffs. A few dirt roads enter the floodplain from the bluff.

The project area is designated Natural Resources (NR) in the County Draft General Plan Update and is zoned Open Space – Recreational (OS-R) in the County Draft Zoning Code. Surrounding land uses include floodplains, agricultural land used for cattle grazing, and an electric transmission utility corridor.

Background

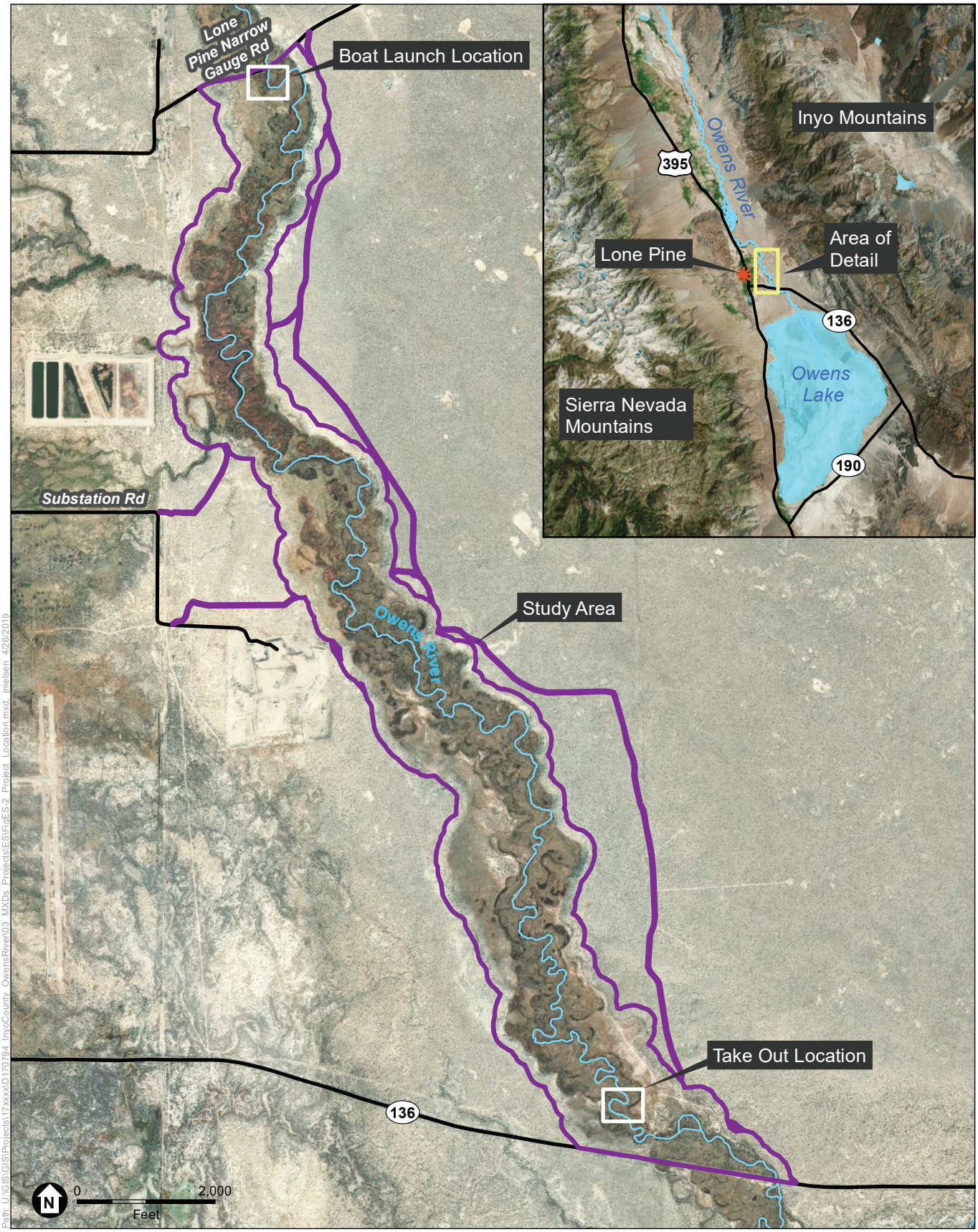
Since 1913, 56 miles of the Owens River has been a mostly dry channel due to diversion of the lower section of the Owens River by the City of Los Angeles into the Los Angeles Aqueduct. Prior to diversion, the City of Los Angeles' Hydrographers recorded flow in the river of 425 cubic feet per second (cfs) on average, with peak flows at well over 3,000 cfs. In December 2006, a perpetual flow of 40 cubic feet per second was established along the length of the formally dry stretch of river. The newly rewatered Lower Owens River is the centerpiece of the Lower Owens River Project (LORP). The LORP guarantees a minimum flow of 40 cfs with additional springtime water releases indexed to forecasted snowmelt runoff. In years when runoff from snow melt is predicted to be normal or higher, a 200 cfs flushing flow is sent down the river in the early to late spring.

SOURCE: ESRI

Owens River Water Trail

Figure ES-1
Regional Location

ESA



Owens River Water Trail

SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Figure ES-2
Project Location

ESA

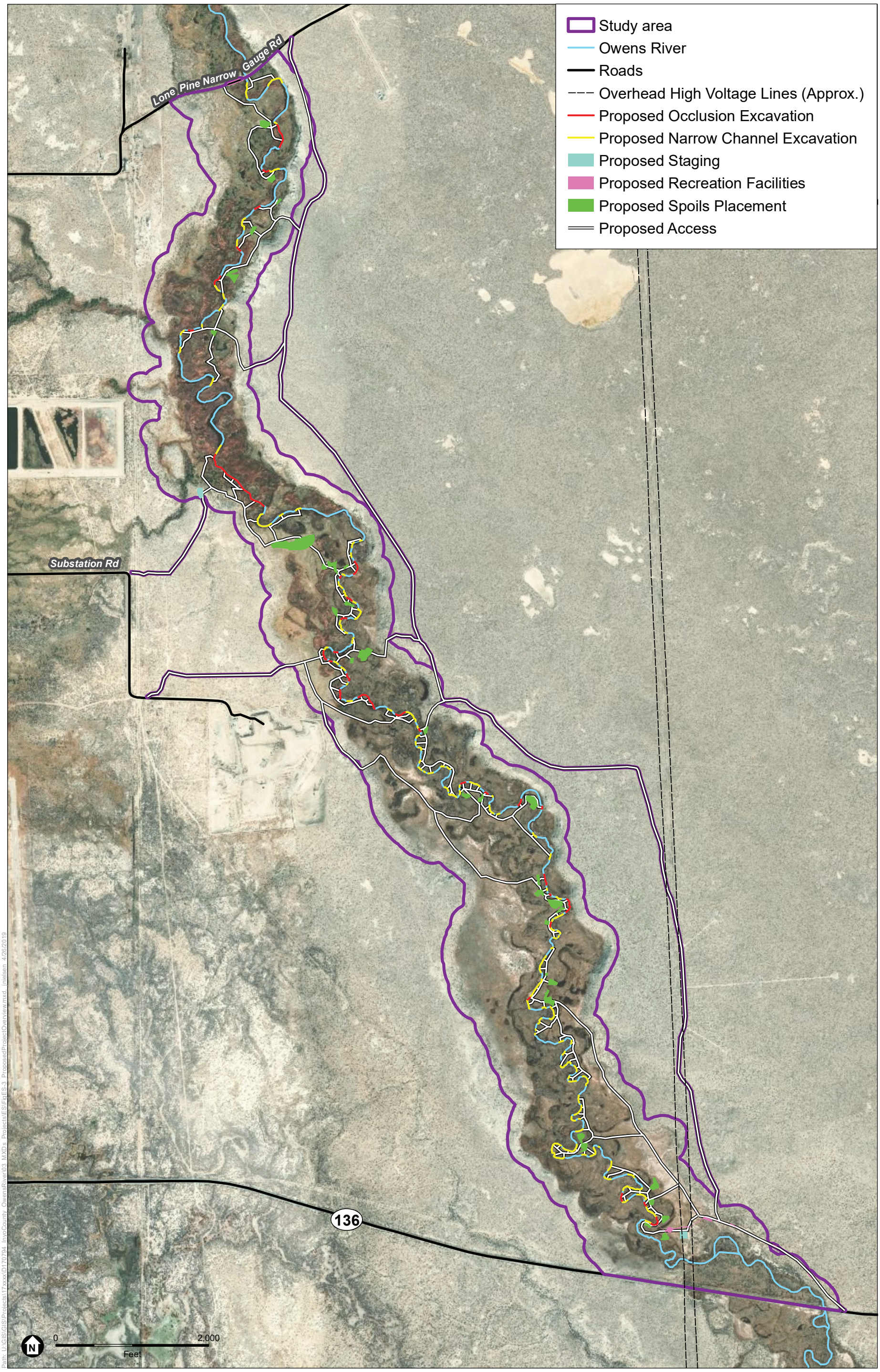
The 78,000 acre LORP involves four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area, the Blackrock Waterfowl Management Area, with seasonal flooding and land management to benefit wetlands and waterfowl; and (4) maintaining several off-river lakes and ponds.

The LORP allows the County a range of new recreational opportunities. With cooperation from LADWP, the County prepared a preferred Draft Recreation Use Plan for the Lower Owens River (January 2013). While the County has not formally adopted this plan, it serves as an advisory document for recreational activities along this segment of the Owens River. Based on community input, the Draft Recreation Use Plan identified boating as the number one recreational activity that residents would like to participate in along the Lower Owens River. The Owens River Water Trail (ORWT or project) would create new recreational opportunities for local residents and visitors, consistent with the Draft Recreation Use Plan.

Project Overview

Currently, sections of the Lower Owens River corridor are non-navigable due to the channel being partially or fully obstructed by emergent aquatic vegetation and associated sediment accumulation as well as by large and small woody debris. The County of Inyo (County) is the project applicant proposing to construct and maintain the ORWT to allow public recreational access solely for non-motorized watercraft on an approximately 6.3-mile segment of the Owens River. The extent of the river to be used for the water trail represents approximately 10 percent of the length of the newly rewatered, 62-mile Lower Owens River. The proposed project would develop facilities for recreational users to enter and exit the river and allow unimpeded navigation for non-motorized watercraft, such as kayaks, stand-up paddle boards, and canoes. In addition to providing recreational access, the proposed project would provide instream and riparian habitat benefits and improve water quality. The proposed project would be a first-of-its-kind designated water trail in the western United States and would benefit recreational opportunities in the Owens Valley region by offering a gentle stretch of river with controlled flows that is ideal for safe paddling.

Construction of the ORWT would consist of two phases: 1) in-channel work for the water trail, and 2) construction of the boat launch and take-out facilities. Construction associated with the water trail would involve the following activities to remove occlusions and establish a single continuous navigable waterway in the dominant channel: 1) clearing of emergent vegetation to a width of approximately 15 feet; 2) relocation of large woody debris (LWD); and 3) removal of bulrush and cattail root masses and sediments and excavation of a short channel segment. The locations of the existing occlusions to be removed are shown in **Figure ES-3**, *Proposed Project Overview.*



SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure ES-3
Proposed Project Overview

ESA

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Clearing of emergent vegetation would occur by one or a combination of hand labor and equipment. Paddle boats and low ground pressure all-terrain utility vehicles would support hand-clearing efforts. Boat-based or amphibious equipment, which generally mows or masticates emergent vegetation, would be utilized as practicable to clear vegetation. It is estimated that between 6,462 cubic yards (cy) and 8,530 cy of emergent vegetation would be cleared from the river channel.

At occlusions where emergent vegetation is growing across the channel, light excavation to a width of 15 feet and an average depth of one foot would occur to remove root masses. In-channel excavation is currently anticipated to occur roughly between river mile (RM) 45.1 and RM 45.3. In this area, the river channel is comprised of a series of several disjunct channel segments, oxbow meanders, and isolated side channels. While the geomorphic cause of this channel condition is unknown, it is thought to be caused by relic beaver dams. The project would re-establish a single-thread channel through this reach. In total, excavated materials from removal of the occlusions and channel excavation are anticipated to result in up to approximately 5,200 cy of spoils material, which would most likely consist of a mixture of organic debris (e.g., tubers, roots, and shoots of tules), muck, and mineral soil. Based on input from contractors and field observations, spoils would likely consist of approximately 20 to 50 percent mineral soil by volume.

Spoils generated from the vegetation removal and excavation at the occlusions would be transported to spoils placement areas using existing informal dirt ranch roads along the river as shown in Figure ES-3). Spoils placement areas would vary in geographic location as well as size, ranging from approximately 2,650 to 67,000 square feet in size covering a total of approximately 6.66 acres. The majority of the 27 spoils areas would be located within proximity to the river segments from which occlusions would be removed. Spoils areas were identified based on certain criteria, including locations above the 200-cfs inundation zone to ensure that spoils would not wash back into the river channel. In addition, the spoils areas excluded sensitive habitats and wetland areas.[1]

Combining the material from the in-channel excavation with the vegetation removal, the project would result in approximately 11,662 to 13,730 cy of wet material.[2] The emergent vegetation and material from channel excavation spread on the spoils areas could result in piles ranging from 0.6 to 3.65 feet, with an average depth of approximately 1.6 feet. The actual depth of piles may vary slightly in the field; methods for distributing spoils would be based on actual materials excavated and the objective to spread materials as thinly as possible to encourage deflation and the recolonization of spoils areas by native vegetation

[1] The areas shown on Figure ES-3 were based on vegetation and floodplain mapping; actual boundaries may vary slightly during project implementation based on field conditions.

[2] Approximately 2,380 linear feet of occlusions and approximately 1,890 square feet of narrow channel would be removed from the area of relic beaver dams (occlusions 8-11 on the figures provided in Appendix B-3 of this EIR). The combined volume of emergent vegetation and material from channel excavation would be approximately 5,000 cy of material or approximately 27% of the total materials to be generated by the project.

LWD blocking the navigable channel would be relocated to nearby banks or inlet embayments. Small LWD pieces would be moved manually by hand or with winches. Larger LWD pieces would be relocated by shore-based equipment and lodged in emergent vegetation out of the main channel. Due to relatively small fluctuations of water surface elevation and small variation in channel velocities, LWD is not currently envisioned as requiring anchors or ballast.

The boat launch and take-out facilities, which would be adjacent to the river, would consist of a ramp or dock or similar appurtenance to allow all-abilities loading and unloading of watercraft. The boat launch and take-out facilities would require limited grading, construction of roads/parking, placement of concrete pads (2), and construction of wheelchair accessible launch facilities. To support the boat launch and take-out facilities, a prefabricated, contained vault restroom would be installed as well as a changing area in proximity to the staging area that meets the design criteria of the Americans with Disabilities Act (ADA). A gently sloping hardened ramp (e.g., pre-cast concrete or vinyl, or gravel/geotextile) would allow all-abilities entry and exit at water surface elevations. The boat launch and take-out bout be a maximum of 500 square feet with assorted boulders strategically placed to provide bank stabilization. Native vegetation would be used for biotechnical bank stabilization in addition to boulder placement. The boat launch and take-out facilities would allow easy and safe access to the water trail for people of all abilities, including the disabled through the provision of transfer step, transfer board, grab bars and/or surface textures.

Weather resistant signage protected by a kiosk would be included at the boat launch and take-out facilities, which would convey water and wildfire safety information, rules, emergency contacts and interpretative information. The County would coordinate with Tribes, LADWP, law enforcement, and local ranchers regarding the information to be included on the signs. Additional signage could be provided along the water trail itself, which could include, but not be limited to, topics such as the region's ranching history, history and information on the local Native American tribes, and surrounding scenic views. In addition, reflective mileage signposts would be installed every half-mile as a safety precaution, allowing a known location if rescue were to be required. A prominent sign would be installed above the river just before the takeout to alert paddlers of the location of the takeout (i.e., which side of the river and the number of feet remaining).

Construction Schedule

Construction could commence in 2019 and would occur over an approximately seven-month period, any time between the months of September and March (considered a work season). Construction activities would generally avoid the spring and summer months to avoid bird nesting season. However, construction of the boat launch and take-out facilities may occur any time of year independent of the in-channel work. If construction were to occur during the nesting season a qualified biologist would be on site to conduct a pre-construction survey and monitor. Construction activities would occur Monday through Friday from 7:00 a.m. to 5:00 p.m in accordance with the County Ordinance. In the circumstance of inclement weather or to maintain project schedule, the contractor, may seek approval from the County to extend construction days to occur during weekends. In addition, the construction schedule may be required to be extended or spread over two work seasons to account for unforeseen circumstances that may arise.

Operation and Maintenance

Ongoing maintenance activities are anticipated to maintain the integrity of the water trail as well as the boat launch and exit facilities. Manual work and/or mechanical clearing activities would be implemented on an as-needed basis to remove emergent vegetation below the waterline from the channel in order to maintain an open, navigable water trail. Maintenance activities would remove vegetation above, and up to 3 feet below the water surface elevation to maintain the integrity of the water trail at 15 feet wide. Maintenance would consist of vegetation management only, and would be limited to the harvest of shoots, stalk, and leaves and would not include any excavation of the channel bed. The technique of underwater cutting deprives the rhizome mass of oxygen which otherwise would be translocated down emergent stems.

Maintenance is planned to occur during late fall and early winter to coincide with dormancy, at which time shoots do not resprout when cut. Cutting of shoots at this time drowns the rhizomes, diminishing plant vigor and inhibiting future regrowth. As such, the amount of emergent vegetation needing to be cleared in the first year would be approximately 10 percent of the volume of vegetation initially cleared during project construction (approximately 600 to 800 cy) and would lessen with each successive year as the amount and density of regrowth decreases over time.

The emergent vegetation removed during annual maintenance would be piled in areas at least 15 feet from the water edge and above the 200-cfs inundation zone, which are characterized by saltgrass and without mesic vegetation. During maintenance activities, the emergent vegetation removed from the channel would not be placed on top of spoils associated with initial project construction or subsequent maintenance to avoid interference with the integration and recolonization of native species in previously placed spoils.

In addition to maintaining the river channel portion of the water trail, Inyo County would also be responsible for maintenance of the boat launch and take-out facilities. Maintenance would include tasks such as: trash collection and removal; collection donations from the iron ranger; servicing of vault toilets; maintaining signage; occasional repairs to the access roads and parking areas; as-needed repairs to livestock exclusion fencing; and landscape maintenance.

Public Review Process

In compliance with the State CEQA Guidelines, the County initiated a public participation process with the preparation of an Initial Study for the project and circulation of a public Notice of Preparation (NOP) to inform the public that the County was preparing an EIR for the project. The NOP was distributed to State, regional, and local agencies, and members of the public and posted on the County's website and commenced a 30-day scoping period beginning on May 24, 2018 and ending June 25, 2018. The purpose of the NOP was to formally convey that the County was preparing a Draft EIR for the project, and to solicit input regarding the scope and content of the environmental information to be included in the Draft EIR. The NOP also included an announcement of a public scoping meeting to be held on June 11, 2018. The Initial Study and NOP are provided in Appendix A of this Draft EIR. In addition, the verbal comments received at the public meeting are summarized and written comments are also included in Appendix A.

Areas of Controversy/Issues to Be Resolved

Section 15123 of the CEQA Guidelines states that an EIR shall identify areas of controversy known to the lead agency, including issues raised by the agency and the public. The following environmental issues were those of key concern that may be controversial.

Four comment letters were received from: California Department of Transportation (District 9), California Department of Fish and Wildlife, California Regional Water Quality Control Board (Lahontan Region), and Lone Pine Paiute-Shoshone Reservation. The comments in the letters and other known areas of controversy include:

- Construction of improvements should be outside of State right-of-way
- Need for an encroachment permit if work is to be conducted in the right-of-way
- Assess impacts on drainage and water quality
- Evaluate potential indirect impacts to biological resources; resources should be inventoried/surveyed
- Evaluate potential cumulative impacts
- Use of local onsite propagules from project area for restoration
- Hydromodification (alteration of the natural flow of water through a landscape) should be mitigated; concern of changes affecting current fishing holes
- Provide protection of rich and robust culture
- Support for opportunities for traditional practices and healthy family recreation
- Concern of potential impacts resulting from increase in use of area
- Disposal of emergent vegetation and excavated materials
- Impacts resulting from an increase in activity and people in the area

Significant and Unavoidable Environmental Impacts

CEQA Guidelines Section 15126.2(c) requires that an EIR describe any significant impacts that cannot be avoided, even with implementation of feasible mitigation measures. Where there are significant impacts, their implications and the reason why the project is being proposed, notwithstanding their effect, should be described.

As indicated in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR, the project would not result in any impacts that would remain significant following implementation of mitigation measures. Potentially significant impacts were identified in the areas of biological resources, cultural resources, geology and soils (paleontological resources), and hydrology and water quality. However, these potentially significant impacts would be mitigated to below a level of significance with implementation of mitigation measures identified in this EIR.

Alternatives

The CEQA Guidelines require an analysis of alternatives to proposed projects. According to CEQA Guidelines Section 15126.6 (a), the purpose of analyzing project alternatives is to identify alternatives that "…*would avoid or substantially lessen any of the significant effects of the project."* According to Section 15126.6(e), an EIR alternatives analysis should include the analysis of a No Project Alternative to allow decision makers to compare the impacts of approving a proposed project with the impacts and foreseeable future of not approving that project.

As indicated in the Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, with implementation of mitigation measures, the impacts of the project would be reduced to less than significant levels, and as such there would be no significant and unavoidable environmental impacts to be lessened through the selection of an alternative project. Nonetheless, four alternatives have been selected for analysis based on their ability to avoid or reduce the magnitude of the project's adverse environmental impacts, and to inform the decision-making process. The four alternatives analyzed include:

Alternative 1 – No Project Alternative. Pursuant to Section 15126.6(e) of the CEQA Guidelines, the No Project Alternative represents a scenario where the project would not be implemented and no changes in the physical conditions in the approximately 6.3-mile stretch of river would occur.

Alternative 2 – Alternative Construction Approach. Alternative 2 would develop the water trail and the boat launch and take-out facilities as described for the proposed project. However, the construction method would be different under Alternative 2. Construction would be done with an amphibious excavator that would proceed from the upstream project limit to the downstream limit in a single step process. The excavator would proceed along the river bank removing occlusions and emergent vegetation together. Spoils would be placed adjacent to the river rather than being transported to the stockpile locations identified for the project. Spoils would be placed a minimum of 15 feet from the edge of water in order to utilize existing vegetation as filter strips to minimize the movement of sediments. Placed spoils would be contoured to conform to adjacent existing grade and to minimize the disturbance of existing flow paths. At the end of the work day, the amphibious excavator would be drive along designated access routes to a location a minimum of 150 feet from the edge of water. The access routes under this Alternative would be the same as those identified for the project. All refueling and maintenance would occur a minimum of 150 feet from the edge of water. Maintenance under Alternative 2 would be essentially the same as the project but would be done by hand or using a small CAT marsh buggy or similar multifunctional amphibious equipment designed for cutting and collection of vegetation. The equipment used for maintenance would move down the channel corridor and would remove benthic aquatic vegetation that might start to overgrow the channel. Spoils would be limited and would be placed along the banks of the channel set back a minimum of 15 feet from the water's edge.

Alternative 3 – Alternative Location of Put-In Facility. Alternative 3 would develop the water trail and the boat launch and take-out facilities as described for the proposed project. However, the put-in facility would be located further away from the river channel with the majority of the facility located outside of the existing riparian habitat along the river channel. The location would be to the west of the location under the project. The overall design of the boat put-in facility would be similar to the proposed project and would include the prefabricated contained vault restroom would be installed as well as wildlife resistant trash receptacles, and weather-resistant interpretative and safety sign kiosk. Fencing would be installed around the western perimeter of the amenities to separate the boat launch facility from the existing, surrounding grazing activities. As with the project, access would be provided via Lone Pine Narrow Gauge Road, but further west under Alternative 3. All other other aspects of the project would remain the same.

Alternative 4 – Off-Site Disposal of Materials Alternative. Alternative 4 would consist of the same design components and construction, operation, and maintenance activities as the proposed project, with the exception that the spoils materials from the construction of the water trail would be piled to allow for deflation due to dewatering and drying at the identified spoils areas and then hauled off-site to the Lone Pine Landfill. The material would be removed from the floodplain in two or three steps depending on the location of the spoils area (i.e., west or east side of the river). For spoils on the west side of the river, after dewatering and drying, the material would be loaded by the tracked excavator with thumb into a 10 cubic yard tracked dump-truck, such as a Marooka, and hauled on the informal roads to the landfill. The tracked amphibious haul truck would make approximately 313 one-way trips to transport the material to the landfill. From the east side of the river, after dewatering and drying, the material would be loaded by the tracked excavator into a tracked dump truck, which would then transport the materials over sometimes wet roads to a temporary transfer area, which would be located in an upland area, requiring approximately 363 one-way trips. Since the tracked dump truck is not designed to be driven over County or State roads and highways, the material would be reloaded into 18 cubic yard capacity highway dump trucks that would travel on the informal roads to access either Lone Pine Narrow Gauge Road or State Route 136 and then would travel to Substation Road, which leads to the landfill. Approximately 183 one-way trips (366 round trips) would be made to transport the material to the landfill. Restoration of disturbed areas would occur as with the project. In addition, ongoing maintenance would occur as with the project.

Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR and that if the “no project” alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives.

The No Project Alternative would have less impact than the project as a water trail would not be developed and no construction, operation, or maintenance would occur. However, the No Project Alternative would not meet any of the project’s objectives. This Alternative would not provide access to the Owens River as a recreational resource and would not provide recreational and educational opportunities for the surrounding community and visitors. In addition, the No Project

Alternative would not include restoration activities for natural habitats, and would not meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan.

Of the remaining alternatives, Alternative 2 would have similar impacts to the project for all resource areas except for air quality, GHG emissions, and hydrology and water quality. For biological resources, the use of an amphibious excavator would result in a reduction of travel along access routes from the river to the spoils areas. In addition, the lower ground pressure of the specialized equipment would result in less compaction of the soil and potentially less damage to vegetation. However, the amphibious excavator would result in an increase in the construction footprint along the channel compared to the proposed project. Although the weight distribution of the equipment would result in less compaction, the increase in footprint would result in an increase in temporary biological impacts relative to riparian habitat and sensitive natural communities, CDFW potentially jurisdictional areas, and USACE/RWQCB potentially jurisdictional areas. Mitigation for biological resources would be required for Alternative 2, and therefore, the significance determination would remain the same as the project. As for hydrology and water quality, Alternative 2 would have a shorter construction period compared to the project. Thus, temporary impacts related to turbidity, organic-laden sediment, and other pollutants in the waterway would be reduced temporally compared to the project. Mitigation measures would be required for Alternative 2, and therefore while impacts would be decreased, the significance determination would remain the same as the project. In addition, while air quality and greenhouse gas emissions would be less than significant under the project and Alternative 2, the shorter construction period and reduction in the various types of equipment that would occur under Alternative 2 would result in a reduction in air and greenhouse gas emissions. In terms of the project objectives, Alternative 2 would meet all of the project objectives.

Alternative 3 would result in a limited change in impacts compared to the project for all resource areas. Alternative 3 was designed with the intent of reducing biological resource impacts by siting the put-in location farther from the river. However, based on the analysis, impacts to biological resources would remain similar to the proposed project. With regard to project objectives, Alternative 3 would meet all of the project objectives.

Alternative 4 was evaluated to address concerns raised by LADWP with regard to leaving materials in the spoils areas to decompose. Alternative 4 would result in an increase in air and greenhouse gas emissions compared to the project as a result of the additional equipment to move materials and haul trucks that would be necessary to haul the materials to the Lone Pine Landfill. In addition, while Alternative 4 would restore the area to pre-construction conditions, this alternative would result in an increase in the need for restoration. The additional effort could result in the potential for the introduction of weeds in the area, which would be similar to the proposed project relative to the construction of the water channel, but greater than the proposed project from the spoils areas through the areas that must be accessed to haul the material off-site. Impacts to other issue areas would be the same as under the project. With regard to project objectives, Alternative 4 would meet all of the project objectives.

In summary, the *CEQA Guidelines* Section 15126.6(a) directs that an EIR consider alternatives that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. While the project would result in potentially significant impacts, with the implementation of mitigation measures no significant and unavoidable impacts would result. In considering Alternatives 2, 3, and 4 relative to the project, Alternative 3 would result in similar impacts to the project in all of the issue areas. Alternative 2 would increase temporary significant impacts to biological resources compared with the project but the specialized equipment would result in less compaction and less equipment trips to move materials to the spoils areas. In addition, Alternative 2 would decrease potentially significant impacts to air quality, GHG emissions, and hydrology and water quality as discussed above. However, as with the project, with the implementation of mitigation measures for Alternative 2, impacts would be less than significant. Alternative 4 would result in an increase in air and greenhouse gas emissions resulting from the additional handling and hauling of materials. However, as with the project such impacts would be less than significant. Alternatives 2, 3, and 4 would meet all objectives of the project.

Summary of Environmental Impacts

This section provides a summary of impacts, mitigation measures, and level of significance after implementation of mitigation measures associated with the project. The summary is provided by environmental issue area below in **Table ES-1**, *Summary of Project Impacts and Mitigation Measure*s.

TABLE ES-1
SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance
3.1 Aesthetics/Visual Resources		
Impact Statement AES-1: Construction of the ORWT would temporarily alter the existing conditions in the project area. However, the new permanent facilities developed under the project would not obstruct scenic vistas of the surrounding landscape or degrade the visual quality or character of the project area. Operation and maintenance of the ORWT would ensure that the project area maintains its high visual quality and allow users to experience the surrounding scenic views. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
Impact Statement AES-2: Implementation of the project would not include the removal of trees or rock outcroppings and would not damage any historical structures. In addition, implementation of the project would not substantially change existing views of the project area and thus would not affect the eligibility of the segment of Highway 395 that runs through Lone Pine to be designated a scenic highway. Therefore, development of the project would not damage scenic resources within an officially designated or eligible scenic highway. Impacts would be less than significant.	No mitigation measures are required.	Less than significant.
3.2 Air Quality		
Impact Statement AQ-1: Construction and operation of the project would not conflict with or obstruct implementation of the applicable air quality plans. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.

Environmental Impact	Mitigation Measures	Level of Significance
Impact Statement AQ-2: Construction and operation of project would result in emissions of criteria air pollutants and pollutant precursors. However, the project would not result in a cumulatively considerable net increase in any criteria pollutants for which the region is in non-attainment. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
Impact Statement AQ-3: Construction and operation of the project would result in emissions of criteria pollutants, ozone precursors and toxic air contaminants. However, the project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
Impact Statement AQ-4: Construction and operation of project would emit criteria pollutants and ozone precursors for which the Air Basin is considered an attainment or maintenance area. However, it would not result in emissions that would adversely affect a substantial number of people. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
3.3 Biological Resources		
Impact Statement BIO-1: The proposed project has the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulation, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. However, implementation of Mitigation Measures BIO-1 through BIO-3 would reduce impacts to special-status species to a less than significant level.	**Mitigation Measure BIO-1:** The following mitigation shall be implemented for avoidance and minimization of impacts to special-status plant species within the project site: a. Prior to construction activities, a focused rare plant survey shall be conducted by a qualified biologist to confirm presence/absence of special-status plant species within the project site (i.e., within the project footprint where direct permanent or temporary impacts due to ground disturbance may occur) within the appropriate blooming periods of each species (unless a qualified biologist confirms that special-status plant species can be definitively identified outside of the blooming period). b. If any special-status plant species are found, these species or population shall be flagged (or otherwise delineated) by a biologist and shall be avoided to the greatest extent feasible (i.e., no work	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	will occur within a 50-foot buffer of special-status plants). If work occurs within a 50-foot buffer of a special-status plant species individual and/or population, a qualified biologist shall be on-site during any ground disturbing activities. c. To minimize indirect impacts to special-status plant species within the project site, prior to construction activities, all heavy equipment proposed for use on-site shall be cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the project site to reduce the potential for the spread of weed seeds during the project. In addition, to discourage non-native or invasive weed species from establishing on the piles within the spoils areas, any muds shall be covered with cut native vegetation to act as a protective mulch as the materials decompose. d. If avoidance of a special-status plant species is not feasible (i.e., no work will occur within a 50-foot buffer of special-status plants), and potential impacts to special-status plant species is considered significant (i.e., impacts would threaten regional populations of these species), coordination with Inyo County staff biologist(s) would be required to confirm suitable mitigation prior to ground-disturbing activities. The mitigation strategy may include avoidance, on-site or off-site translocation, seed collection, and/or restoration, and shall be outlined in a mitigation plan to be approved by Inyo County. At a minimum, the plan shall include a description of the existing conditions, methodology, site preparation and planting methods, and maintenance and monitoring schedule. e. Owens Valley checkerbloom is State Endangered. If this species is found within the project site and avoidance is not feasible (i.e., no work will occur within a 50-foot buffer of special-status plants), the County shall obtain a 2081 Incidental Take permit under CESA from the CDFW. The following would be incorporated, as a minimum, into the permitting, subject to approval by CDFW. 1. A mitigation and monitoring plan shall be prepared. The plan shall focus on the preservation and/or replacement of the resource (e.g., transplantation, seeding, planting; salvage/dispersal of duff and seed bank; removal of large stands of invasive species); and maintenance and future monitoring. f. Additionally, in accordance with the Native Plant Protection Act (FGC, Division 2, Chapter 10, Section 1913), the Project	

Environmental Impact	Mitigation Measures	Level of Significance
	Proponent[3] shall notify the CDFW "at least 10 days in advance of changing the land use to allow for salvage of such plant. The failure by the department to salvage such plant within 10 days of notification shall entitle the owner of the land to proceed without regard to this chapter." **Mitigation Measure BIO-2:** Impacts to nesting birds would be avoided by conducting all construction and maintenance activities outside of the bird nesting season (i.e., work shall occur October 1 to January 31). If bird nesting season cannot be avoided, the following measures would be followed: a. During the bird nesting season (February 1 to September 30), a qualified biologist shall conduct a pre-construction survey of all suitable habitat for the presence of nesting birds no more than 5 days prior to construction and/or maintenance activities. The results of the pre-construction survey would be valid for 5 days; if vegetation removal activities do not commence within 5 days following the survey, a new pre-construction nesting bird survey shall be conducted before these activities begin again.[4] b. If any active nests are found during a pre-construction nesting bird survey, a buffer of 300 feet (500 feet for raptors), or as determined appropriate by the qualified biologist (based on species-specific tolerances and site-specific conditions), would be delineated, flagged, and avoided until the nesting cycle is complete (i.e., the qualified biologist determines that the young have fledged or the nest has failed). **Mitigation Measure BIO-3:** The County shall implement an Environmental Awareness Program intended to educate the public of the biological resources and special-status species associated with the Owen River. The intention of the program shall be to encourage active conservation efforts among the public to help conserve the natural resources of the area. At a minimum, the Environmental Awareness Program shall include the following components: a. An informational kiosk shall be installed at the entrance point to the water trail that informs the public about the natural resources of the area. The intent of the kiosk is to bring awareness to the biological resources associated with the Owen River, and inform recreationalists to stay on the water trail, that dogs shall be kept on-	

3 LADWP would designate authority to the County for such notification.

4 Given the linear nature of the project area, a phased approach to pre-construction nesting bird surveys is recommended, and should be based on the project's construction or maintenance schedule for work areas anticipated to be completed within 5 days of each area survey.

Environmental Impact	Mitigation Measures	Level of Significance
	leash, and that trash shall be properly disposed of in trash receptacles. b. Signage shall be incorporated to deter unauthorized public access off of the Owens River Water Trail. Public access shall be limited to the boat launch and take-out facilities and water trail only.	
Impact Statement BIO-2: The proposed project has the potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. However, implementation of Mitigation Measures BIO-4 and BIO-5 would reduce impacts to sensitive natural communities and riparian habitat to a less than significant level.	**Mitigation Measure BIO-4:** The County shall implement the following measure to ensure temporary and permanent impacts to sensitive natural communities are less than significant: a. Prior to construction, a qualified biologist would flag any sensitive natural communities in the field, which will be avoided to the maximum extent practicable. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist. b. To discourage non-native or invasive weed species from establishing on the piles within the spoils areas, any muds shall be covered with cut native vegetation to act as a protective mulch as the materials decompose. c. Temporary impacts to sensitive natural communities are expected to passively recover and reestablish naturally to pre-project conditions based on project design and construction methodologies. The County shall retain a qualified biologist to monitor temporary impact areas for two years to ensure the project site returns to pre-project conditions (i.e., pre-project elevation contours and revegetated). If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions. d. For permanent impacts to sensitive natural communities, the County shall provide one of the following options, or a combination thereof: 1. On- and/or off-site preservation of sensitive natural communities at a ratio no less than 1:1 for permanent impacts. 2. On- and/or off-site creation, restoration, and/or enhancement of sensitive natural communities at a ratio no less than 2:1 for permanent impacts. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration,	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	and/or enhancement of equivalent habitats within disturbed habitat areas of the project site and/or off-site. **Mitigation Measure BIO-5:** The County shall obtain a Streambed Alteration Agreement permit under Section 1602 of the California Fish and Wildlife Code from the CDFW. The following would be incorporated, as a minimum, into the permitting, subject to approval by CDFW: a. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist experienced in jurisdictional delineations. b. Temporary impacts to jurisdictional riparian habitat would be returned to pre-project conditions (i.e., pre-project elevation contours and revegetated), and will be monitored for two years, or until a qualified biologist determines that the project site has returned to pre-project conditions. If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions. c. For permanent impacts to jurisdictional riparian habitat, the County shall provide one of the following options, or a combination thereof: 1. On- and/or off-site preservation of CDFW jurisdictional riparian habitat at a ratio no less than 1:1 for permanent impacts, or a reduced ratio if mutually-agreed upon with CDFW. 2. On- and/or off-site creation, restoration, and/or enhancement of CDFW jurisdictional riparian habitat at a ratio no less than 2:1 for permanent impacts, or a reduced ratio if mutually-agreed upon with CDFW. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration, and/or enhancement of equivalent habitats within disturbed habitat areas of the project site and/or off-site.	
Impact Statement BIO-3: The proposed project has the potential to have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. However, implementation of Mitigation Measure BIO-6 would reduce	**Mitigation Measure BIO-6:** The County shall obtain a CWA Section 404 permit from the USACE and a CWA Section 401 permit from the RWQCB. The following would be incorporated, as a minimum, into the permitting, subject to approval by the USACE and RWQCB: a. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist.	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
impacts to wetlands and waters to a less than significant level.	b. Areas of jurisdictional wetlands temporarily impacted by the project shall be monitored for two years, or until a qualified biologist determines that the project site has returned to pre-project conditions. If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions. c. For permanent impacts to jurisdictional wetlands, the County shall provide one of the following options, or a combination thereof: 1. On- and/or off-site preservation of USACE/RWQCB jurisdictional "waters of the U.S." at a ratio no less than 1:1 for permanent impacts, or reduced ratio if mutually-agreed upon with regulatory agencies. 2. On- and/or off-site creation, restoration, and/or enhancement of USACE/RWQCB jurisdictional "waters of the U.S." at a ratio no less than 2:1 for permanent impacts, or reduced ratio if mutually-agreed upon with regulatory agencies. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration, and/or enhancement of equivalent features within disturbed areas of the project site and/or off-site. In addition, the plan shall provide details as to the implementation, performance standards, success criteria, maintenance, and future monitoring.	
Impact Statement BIO-4: The proposed project has the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede with the use of native wildlife nursery sites. However, implementation of Mitigation Measures BIO-7, BIO-2, BIO-8, BIO-9, and BIO-10 would reduce impacts to wildlife movement and nursery sites to a less than significant level.	**See Mitigation Measure BIO-2 above.** **Mitigation Measure BIO-7:** At the start of in-water work, a hydrologist/biologist shall monitor water quality (e.g., based on thresholds determined appropriate by the County hydrologist) and fish stress (e.g., indicated by surface mouthing, schooling and leaving an area, or observation of invertebrates crawling out of the water to get air) during the initial construction. If determined necessary by the monitoring hydrologist/biologist, a sediment curtain or other measures to minimize/limit turbidity would be installed within the project area. **Mitigation Measure BIO-8:** The Environmental Awareness Program shall include information about the wildlife corridor associated with the Owens River. Signage shall inform recreationalists about the wildlife corridor and the importance of staying on the water trail or boat launch and take-out facilities only, respecting wildlife and stay a safe distance away, and not feeding wildlife. **Mitigation Measure BIO-9:** Impacts to elk nursery sites would be avoided by conducting all construction and maintenance activities outside of the elk calving season (i.e., work shall occur July 1 to March	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	31). During construction, the placement of large woody debris shall be strategically placed along the banks to discourage recreationalists from disembarking along the river, where possible. In addition, cattle exclusion fencing may be installed along the boat launch and take-out facilities to confine recreationalists to the developed areas and to separate visitor from cattle. **Mitigation Measure BIO-10:** Signage shall be installed to inform recreationalists about Quagga mussels and how to sanitize their gear and equipment before entering and after exiting the water trail to prevent the spread of this invasive species.	
Impact Statement BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No mitigation measures are required.	No impact.
Impact Statement BIO-6: The proposed project would not conflict with the provisions of an adopted NCCP/HCP, or other approved local, regional, or state habitat conservation plan.	No mitigation measures are required.	No impact.
3.4 Cultural Resources		
Impact Statement CUL-1: The proposed project has the potential to cause a substantial adverse change in the significance of a historical resource. However, implementation of Mitigation Measures CUL-1 through CUL-8 would reduce potential impacts to less than significant.	**Mitigation Measure CUL-1:** Prior to the start of any ground disturbing activity associated with the proposed project**,** a Qualified Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2008) shall be retained by the County to carry out all mitigation measures related to archaeological resources. **Mitigation Measure CUL-2:** Prior to any ground disturbing activities associated with the proposed project, the Qualified Archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The County shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance. **Mitigation Measure CUL-3:** Prior to any ground disturbing activities associated with the proposed project, exclusionary fencing shall be installed to ensure that the 33 archaeological sites within or immediately adjacent to (within 150 feet of) the proposed project access roads are	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	not inadvertently impacted during project implementation. For the 14 archaeological sites located immediately adjacent to proposed project access roads (P-14-000035, -000068, and -000308; and ESA-ORWT-Site-001P, -002H, -003M, -004H, -005M, -016P, -018P, -021P, -022P, -024P, and -026P), the exclusionary fencing shall encompass the mapped site boundaries plus a 10-foot radius to ensure an appropriate buffer is maintained between the sites and project-related ground disturbing activities. For the 19 archaeological resources bisected by project access roads (P-14-000081, -000310 and -009230; and ESA-ORWT-Site-006P, -007P, -008P, -009P, -010P, -011P, -012P, -013P, -014P, -015P, -017P, -019P, -020P, -023P, -025P, and -027P), the exclusionary fencing shall be established along the shoulder of the existing roads. For the portion of archaeological site P-14-000310 that overlaps the proposed staging area, the exclusionary shall be established along the margins of the graded pull out area to inhibit access to the undisturbed portions of the site. To ensure avoidance, the exclusionary fencing shall be marked with signs indicating that staff associated with the proposed project are not to go beyond the limits of the fencing. The exclusionary fencing shall not identify the protected areas as demarcating archaeological resources in order to discourage unauthorized disturbance, vandalism, or collection of artifacts. **Mitigation Measure CUL-4:** Prior to the start of ground disturbing activities associated with the proposed project, an archaeological monitor, working under the supervision of the Qualified Archaeologist, and a Native American monitor associated with a locally affiliated tribe, shall be retained to conduct monitoring of project-related ground-disturbing activities including installation of exclusionary fencing, excavations occurring within 50 feet of the 33 known archaeological resources, as well as the construction of all facilities associated with the boat launch and take-out. Based on observations of subsurface soil stratigraphy or other factors during initial ground disturbing activities, and in consultation with the County and Native American monitor, the Qualified Archaeologist may modify monitoring as warranted if the Qualified Archaeologist determines that the sensitivity is contrary to what was predicted. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the Qualified Archaeologist at the completion of construction and shall be provided to the County and filed with the Eastern Information Center within six (6) months of project completion. **Mitigation Measure CUL-5:** In the event of the unanticipated discovery of archaeological materials during project implementation, all work shall immediately cease in the area (within approximately 100 feet) of the	

Environmental Impact	Mitigation Measures	Level of Significance
	discovery until it can be evaluated by the Qualified Archaeologist. Construction shall not resume until the Qualified Archaeologist has conferred with the County and the Native American monitor on the significance of the resource. The Army Corps of Engineers shall also be notified and afforded the opportunity to determine whether the discovery requires addressing under Section 106 Post-Review Discoveries provisions provided in 36 CFR 800.13. If it is determined that the discovered archaeological resource constitutes a significant resource, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the Qualified Archaeologist in consultation with the County and Native American monitor that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. **Mitigation Measure CUL-6:** The proposed signage to be installed at the boat launch and take out kiosks shall include language stating that all water trail users are to stay within the designated recreational areas of the water trail. The language shall also include interpretative information regarding the prehistory of the area, as well as definitions of site looting, vandalism, and pertinent public resources codes for the conviction of vandalism to archaeological resources including but not limited to PRC Sections 5097.993 and 5097.994 (Native American Historic Resource Protection Act), which establishes as a misdemeanor the removal or destruction of Native American archeological or historic sites on public or on private lands, punishable by a fine of up to $10,000 and/or imprisonment. **Mitigation Measure CUL-7:** Provided this measures does not present a safety risk by limiting ingress and egress from the channel, woody debris removed from the Owens River channel during construction shall be placed at points where existing ranch and access roads bound the channel to discourage the ability of recreational users leaving the water trail and using the roads to access archaeological sites located on the margins of the Owens River floodplain and the adjacent terraces. **Mitigation Measure CUL-8:** An annual site condition verification program shall be undertaken to document the condition of the three archaeological sites bisected by or located immediately adjacent to the existing dirt road that would be used to access the boat take out (P-14-	

Environmental Impact	Mitigation Measures	Level of Significance
	000035, -000068, and -000081) as well as the five sites located on the margins of the Owens River floodplain (ESA-ORWT-Site-011P, -012P, -023P, -026P, and -027P). The site verification program shall be implemented by a qualified archaeologist on an annual basis for the first three years of the project's use as a recreational water trail. The goal of the annual site condition verification program is to monitor on an annual basis whether recreational use of the project area is indirectly impacting the eight archaeological sites identified above as a result of an increase in vehicle and foot traffic, inadvertent wandering into archaeological sites, purposeful looting and/or vandalism, and other disturbances that could be an inadvertent result of project operation. The results of the annual site condition verification shall be documented in a brief memorandum and shall include: confirmation of resource boundaries with sub-meter GPS; relocation of previously identified diagnostic artifacts and features; confirmation of locations, quantities, and types of artifacts present; general condition and disturbances observed; and photography to document whether any change in resource condition has occurred. California Department of Parks and Recreations (DPR) 523 form updates, following California Office of Historic Preservation's (OHP) *Instructions for Recording Historical Resources,* shall be prepared and filed with the Eastern Information Center for all resources where changes in setting or condition are observed. If no impacts to archaeological sites are observed following the first three years, the annual site condition verification program may be discontinued. If the annual site condition verification program identifies impacts to archaeological sites resulting from project operations, or if, at any time, the County becomes aware of such impacts, additional protective measures shall be implemented immediately as recommended by the qualified archaeologist and in coordination with local Native American Tribes. If protective measures are implemented, annual verification of the measures' success shall be conducted for a period of three years.	

Environmental Impact	Mitigation Measures	Level of Significance
Impact Statement CUL-2: The proposed project has the potential to cause a substantial adverse change in the significance of known and unknown archaeological resources that may qualify as unique archaeological resources. However, implementation of Mitigation Measures CUL-1 through CUL-8 would reduce potential impacts to less than significant.	See Mitigation Measures CUL-1 through CUL-8 above.	Less than significant with mitigation.
Impact Statement CUL-3: The proposed project has the potential to disturb human remains, including those interred outside of formal cemeteries. However, implementation of Mitigation Measure CUL-9 would reduce potential impacts to less than significant.	**Mitigation Measure CUL-9:** If human skeletal remains are uncovered during Project construction, all work within 100 feet of the find will be immediately halted, and the Inyo County coroner will be contacted to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the County shall contact the California Native American Heritage Commission (NAHC), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC would then identify a Most Likely Descendant (MLD) of the deceased Native American, who would then help determine what course of action should be taken in the disposition of the remains. Per PRC 5097.98, the landowner should ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	Less than significant with mitigation.
3.5 Geology and Soils		
Impact Statement GEO-1: While the project site is located in an area with liquefaction risk, the project would comply with applicable requirements related to seismic-related ground failure. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
Impact Statement GEO-2: In-channel vegetation and soil removal would disturb the channel bottom, potentially increasing sedimentation and erosion within the river. With	See Mitigation Measure HYD-1a and HYD-2 below.	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
implementation of Mitigation Measure HYD-1a and HYD-2, impacts related to erosion would be reduced to less than significant.		
Impact Statement GEO-3: While the project site is located in an area with lateral spreading risk, the project would comply with applicable regulatory requirements related to geologic instability. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
Impact Statement GEO-4: Expansive soils are not prevalent in the county and are not an applicable hazard to the area, and therefore no impact would occur.	No mitigation measures are required	No impact.
Impact Statement GEO-5: The proposed project has the potential to directly or indirectly destroy a unique paleontological resource or unique geologic feature during construction of the boat launch and take-out facilities. However, implementation of Mitigation Measures GEO-1 through GEO-4 would reduce potential impacts to less than significant.	**Mitigation Measure GEO-1:** Prior to the start of construction activities, the County shall retain a Qualified Paleontologist that meets the standards of the Society of Vertebrate Paleontology (2010) to carry out all mitigation measures related to paleontological resources. **Mitigation Measure GEO-2:** Prior to start of any ground disturbing activities, the Qualified Paleontologist shall contribute to any construction worker cultural resources sensitivity training, outlined in Mitigation Measure CUL-2, either in person or via a training module provided to the Qualified Archaeologist. This training shall include information on what types of paleontological resources could be encountered during excavations, what to do in case an unanticipated discovery is made by a worker, and laws protecting paleontological resources. All construction personnel shall be informed of the possibility of encountering fossils and instructed to immediately inform the construction foreman or supervisor if any fossils are unexpectedly unearthed in an area where a paleontological monitor is not present. The County shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance. **Mitigation Measure GEO-3:** The Qualified Paleontologist shall supervise a paleontological monitor meeting the Society for Vertebrate Paleontology standards (2010). The monitor shall be present during all ground-disturbing activities occurring within areas mapped as older lake deposits (Qlo) at the boat launch and take-out facilities. The monitor shall also be present for all excavation activities exceeding 5 feet in depth for all project components in areas mapped as active alluvium (Qa) and eolian san (Qs), which have the potential to extend into older lake deposits (Qlo) at depth (see Figure 3.5-2). Monitoring shall consist	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. Monitoring can be reduced to part-time inspections or ceased entirely if determined adequate by the Qualified Paleontologist in consultation with the County. Monitoring activities shall be documented in a Paleontological Resources Monitoring Report to be prepared by the Qualified Paleontologist at the completion of construction and shall be provided to the County and filed with the Natural History Museum of Los Angeles County within six (6) months of project completion. **Mitigation Measure GEO-4:** If a unique geologic feature or paleontological resource is discovered during construction, the paleontological monitor shall be empowered to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation of the discovery. An appropriate buffer area shall be established by the Qualified Paleontologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. At the Qualified Paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing and evaluation of the find. All significant fossils shall be collected by the paleontological monitor and/or the Qualified Paleontologist. Collected fossils shall be prepared to the point of identification and catalogued before they are submitted to their final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Los Angeles County Natural History Museum, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school in the area for educational purposes. Accompanying notes, maps, and photographs shall also be filed at the repository and/or school.	
3.6 Greenhouse Gas Emissions		
Impact Statement GHG-1: Construction and operation of the project would result in the generation of GHG emissions. However, the project would not directly or indirectly generate emissions that would have a significant impact on the environment. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.

Environmental Impact	Mitigation Measures	Level of Significance
Impact Statement GHG-2: Construction and operation of the ORWT would result in the generation of GHG emissions. However, the project would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. Therefore, impacts would be less than significant.	No mitigation measures are required.	Less than significant.
3.7 Hydrology and Water Quality		
Impact Statement HYD-1: The proposed project could result in a significant impact to water quality, violate water quality standards, or conflict with existing water quality control and other plans during project construction or operation/maintenance activities that release pollutants into the Lower Owens River. However, these potential impacts would be avoided or mitigated through adherence to permitting requirements or through applied mitigation that would manage in-channel work to minimize release of pollution, sediment, and organic matter into the Lower Owens River.	**See Mitigation Measure BIO-7, above.** **Mitigation Measure HYD-1a: *In-Stream Measures to Minimize Pollution, Sediment Loading, and Dissolved Oxygen Impacts.*** In order to minimize turbidity and sediment loading during project construction and maintenance, the County shall ensure that all in-channel work includes deployment of measures to avoid and/or minimize release of pollutants, sediment, and turbidity into the waterway. Typical measures to be deployed may include the following measures, or measures that are functionally equivalent to the following: • In-channel construction and vegetation removal shall occur during October through May, or otherwise during months when average water temperatures are not elevated, to ensure project activities do not result in dissolved oxygen levels that violate Basin Plan objectives. • All equipment used in-channel and adjacent to the waterway shall be adequately maintained to avoid leaks and cleaned offsite prior to use in the project area, to avoid release of equipment-related pollutants; • Equipment used within standing or flowing water shall have biodegradable hydraulic fluids and lubricants; • Complete all in-channel construction and maintenance activities during low-flow periods (i.e., avoid work during storm flow or periods when in-channel flows exceed 70 cfs); • Remove the occlusion at River Mile 45.1 to 45.3 incrementally to allow the ponded water to drain slowly. In conjunction with Mitigation Measure BIO-7, monitoring shall be conducted downstream during removal to assess the effects on water quality; and	Less than significant with mitigation.

Environmental Impact	Mitigation Measures	Level of Significance
	• Use hand-removal methods to remove emergent vegetation from the channel whenever practicable to minimize sediment release and suspension. **Mitigation Measure HYD-1b:** ***Trash Receptacles.*** The County shall ensure that adequate trash receptacles are installed at the boat launch and take-out areas, and that these receptacles are maintained (including trash removal) on an ongoing basis.	
Impact Statement HYD-2: Construction and operation of the proposed project could result in increased erosion and siltation through removal of in-channel vegetation and occlusions; stockpiling of spoils; and new impervious surfaces. These potential impacts would be reduced to less than significant levels through incorporation of mitigation that would deploy best management practices to manage sediment releases from spoils. Hydraulic analysis indicates that the project would not substantially alter the overall flowpath of the river, would not result in shifting the river system to an unstable (i.e., eroding) state, and would reduce the likelihood of overbank topping that causes flooding.	**Mitigation Measure HYD-2:** ***Floodplain Erosion Management.*** In order to stabilize spoils placed in stockpile areas, the County shall require the contractor to implement best management practices that minimize erosion of spoils, including but not limited to the following: • Place and lightly compact spoils in such a manner as to reduce erosion, • Revegetate by broadcast seeding with native vegetation including, but not limited to, salt grass or native bunch grasses • Encircle spoils placement areas with 100% biodegradable straw wattles. • Stake spoils placement areas using 100% biodegradable wooden stakes.	Less than significant with mitigation.
3.8 Land Use and Planning		
Impact Statement LUP-1: The project would be consistent with the County's General Plan and County Code, the County and LADWP's LORP, and the County's Recreational Use Plan. Therefore, the project would not conflict with an applicable land use plan and impacts would be less than significant.	No mitigation measures are required	Less than significant.

Environmental Impact	Mitigation Measures	Level of Significance
3.9 Recreation and Parks		
Impact Statement REC-1: While the project would have the potential to increase the use of regional recreational facilities, it is not expected to result in a substantial physical deterioration of such recreational facilities. Therefore, the project would result in less than significant impacts to neighborhood parks and regional parks.	No mitigation measures are required.	Less than significant.
Impact Statement REC-2: While the project would include recreational facilities, implementation of mitigation measures would ensure that adverse physical impacts would be reduced to less than significant.	All recommended mitigation measures in Chapter 3.	Less than significant.
3.10 Tribal Cultural Resources		
Impact Statement TCR-1: The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources.	No mitigation measures are required.	No impact.
Impact Statement TCR-2: The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant.	No mitigation measures are required.	No impact.

CHAPTER 1
Introduction

1.1 Purpose of the EIR

The County of Inyo (County) is the project applicant proposing to construct and maintain the Owens River Water Trail (ORWT or project) to allow recreational access for non-motorized watercraft to an approximately 6.3-mile segment of the Owens River. This stretch of the river represents approximately 10 percent of the length of the newly rewatered, 62-mile Lower Owens River. The proposed project would develop facilities for recreational users to enter and exit the river and allow unimpeded navigation for non-motorized watercraft, such as kayaks, stand-up paddle boards, and canoes. In addition to providing recreational access, the proposed project would provide instream and riparian habitat benefits and improve water quality. The proposed project would be a first-of-its-kind designated water trail in the western United States and would benefit recreational opportunities in the Owens Valley region by offering a gentle stretch of river with controlled flows that is ideal for safe paddling.

This Draft Environmental Impact Report (EIR) is intended to inform the County, responsible and trustee agencies, and the public of the proposed project's environmental effects. As the Lead Agency, the County Board of Supervisors has the *principal responsibility for carrying out or approving a project which may have a significant effect upon the environment* (CEQA Statute Section 21067). The Draft EIR is, therefore, intended to publicly disclose those impacts that may be significant, identify measures that would reduce or eliminate such impacts, and describe a range of alternatives for the proposed project that would avoid or substantially lessen impacts. The County Board of Supervisors will consider the information in this Draft EIR, along with other information that may be presented during the CEQA process, including the Final EIR. The EIR will be used in connection with all other permits and all other approvals necessary for the construction and operation of the Project.

1.2 Project Background

Since 1913, 56 miles of the Owens River has been a mostly dry channel due to diversion of the lower section of the Owens River by the City of Los Angeles into the Los Angeles Aqueduct. Prior to diversion, the City of Los Angeles' Hydrographers recorded flow in the river of 425 cubic feet per second (cfs) on average, with peak flows at well over 3,000 cfs. In December 2006, a perpetual flow of 40 cfs was established along the length of the formally dry stretch of river. The newly rewatered Lower Owens River is the centerpiece of the Lower Owens River Project (LORP). The LORP guarantees a minimum flow of 40 cfs with additional springtime water

releases indexed to forecasted snowmelt runoff. In years when runoff from snowmelt is predicted to be normal or higher, a 200 cfs flushing flow is sent down the river in the early spring.

The 78,000-acre LORP involves four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area, the Blackrock Waterfowl Management Area, with seasonal flooding and land management to benefit wetlands and waterfowl; and (4) maintaining several off-river lakes and ponds.

The LORP allows the County a range of new recreational opportunities. With cooperation from LADWP, the County prepared a preferred Draft Recreation Use Plan for the Lower Owens River. While the County has not formally adopted this plan, it serves as an advisory document for recreational activities along this segment of the Owens River. Based on community input, the Draft Recreation Use Plan identified boating as the number one recreational activity that residents would like to participate in along the Lower Owens River. The ORWT would create new recreational opportunities for the public, consistent with the Draft Recreational Use Plan.

1.3 CEQA Environmental Review Process

1.3.1 CEQA Process Overview

This Draft EIR has been prepared in compliance with CEQA (as amended), codified at California Public Resources Code Sections 21000 et seq. and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. The basic purposes of CEQA are to: (1) inform decision makers and the public about the potential, significant environmental effects of proposed activities, (2) identify the ways that environmental effects can be avoided or significantly reduced, (3) prevent significant, avoidable environmental effects by requiring changes in projects through the use of alternatives or mitigation measures when feasible, and (4) disclose to the public the reasons why an implementing agency may approve a project even if significant unavoidable environmental effects are involved.

An EIR uses a multidisciplinary approach, applying social and natural sciences to make a qualitative and quantitative analysis of all the foreseeable environmental impacts that a proposed project would exert on the surrounding area. As stated in CEQA Guidelines Section 15151:

> *An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.*

As described in Section 15121(a) of the CEQA Guidelines, this EIR is intended to serve as an informational document for public agency decision makers. Accordingly, this Draft EIR has been prepared to identify and disclose the significant environmental effects of the proposed project, identify mitigation measures to minimize significant effects, and consider reasonable project

alternatives. The environmental impact analyses in this Draft EIR are based on a variety of sources, including agency consultation, technical studies, and field surveys. The County will consider the information presented in this Draft EIR, along with other factors, prior to making a determination regarding the proposed project. While CEQA Section 150201(a) requires that major consideration be given to avoiding environmental damage, the lead agency and other responsible public agencies must balance adverse environmental effects against other public objectives, taking into account economic, legal, social, and technological factors.

1.3.2 Notice of Preparation and Public Scoping

Pursuant to Section 15082 of the CEQA Guidelines, the lead agency is required to send a Notice of Preparation (NOP) stating that a Draft EIR will be prepared to the state Office of Planning and Research (OPR), responsible and trustee agencies, and federal agencies involved in funding or approving the project. The NOP must provide sufficient information for responsible agencies to make a meaningful response. At a minimum, the NOP must include a description of the project, location of the project, and probable environmental effects of the project (CEQA Guidelines Section 15082(a)(1)). Within 30 days after receiving the NOP, responsible and trustee agencies and the OPR shall provide the lead agency with specific detail about the scope and content of the environmental information related to that agency's area of statutory responsibility that must be included in the Draft EIR (CEQA Guidelines Section 15082(b)).

On May 24, 2018, in accordance with Sections 15063 and 15082 of the CEQA Guidelines, the County published a NOP for the Draft EIR (see Appendix A) and circulated it to governmental agencies, organizations, and persons who may be interested in the proposed project. The NOP requested comments on the scope of the Draft EIR and asked that those agencies with regulatory authority over any aspect of the project to describe that authority. The comment period extended through June 25, 2018. The NOP provided a general description of the proposed actions, a description of the project area, a short list of public agencies whose approval may be required, and a preliminary list of potential environmental impacts. Copies of the NOP were made available for public review on the Inyo County website (https://www.inyocounty.us/EnvironmentalDocuments/EnvDocs.php).

On June 11, 2018, the County conducted a public scoping meeting to obtain comments from interested parties on the scope of the Draft EIR. The purpose of the meeting was to present the project to the public through use of display maps, diagrams, and a presentation describing the project components and potential environmental impacts. Attendees were provided an opportunity to voice comments or concerns regarding potential effects of the project. The verbal comments received at the public meeting are summarized and written comments are included in Appendix A of this Draft EIR.

1.3.3 Draft EIR

The Draft EIR has been prepared pursuant to the requirements of CEQA Guidelines Section 15126. This Draft EIR provides an analysis of reasonably foreseeable impacts associated with the construction, operation, and maintenance of the proposed project as determined through the preparation of the Initial Study and the scoping process. The environmental baseline for

determining potential impacts is the date of publication of the NOP for the proposed project unless otherwise indicated (CEQA Guidelines Section 15125(a)). The environmental setting for each resource assessed in this Draft EIR describes the existing conditions as of the publication of the NOP (May 24, 2018). The impact analysis is based on changes to existing conditions that would result from implementation of the proposed project.

In accordance with the CEQA Guidelines Section 15126, this Draft EIR describes the proposed project and the existing environmental setting, identifies environmental impacts associated with project implementation, identifies mitigation measures for significant impacts, and provides an analysis of alternatives. Significance criteria are defined at the beginning of each impact analysis section for each environmental resource analyzed in this Draft EIR.

1.3.4 Public Review and Comments on the Draft EIR

In accordance with CEQA Guidelines Section 15105, this Draft EIR is being circulated and made available to local, state, and federal agencies, and to interested organizations and individuals who may wish to review and comment during the 45-day review period. All written comments should be directed to:

Inyo County Water Department
c/o Larry Freilich, Mitigation Manager
P.O. Box 337
Independence, California 93526
lfreilich@inyocounty.us

Comments on the EIR must be received by close of business on the last day of the 45-day review period unless the County grants an extension.

1.3.5 Final EIR Publication and Certification

Written and oral comments received in response to the Draft EIR will be addressed in a Response to Comments document that, together with the Draft EIR, will constitute the Final EIR. The County will then consider EIR certification (CEQA Guidelines Section 15090). If the EIR is certified, the County may consider project approval. Prior to approving the project, the County must make written findings with respect to each significant and unavoidable environmental effect identified, if any, in the EIR in accordance with Section 15091 of the CEQA Guidelines. In addition, the County must adopt a Statement of Overriding Considerations concerning each unmitigated significant environmental effect identified in the Final EIR (if any). The Statement of Overriding Considerations will be included in the record of the project's approval and mentioned in the Notice of Determination following CEQA Guidelines Section 15093(c). Pursuant to Section 15094 of the CEQA Guidelines, the County will file a Notice of Determination with the State Clearinghouse and Inyo County Clerk-Recorder within five working days after project approval.

1.3.6 Mitigation Monitoring and Reporting Program

CEQA requires lead agencies to "adopt a Mitigation Monitoring and Reporting Program (MMRP) for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment" (CEQA Guidelines Section 15097). The MMRP will be available to the public at the same time as the Final EIR.

1.4 Organization of the EIR

The EIR is organized into the following chapters:

S. Executive Summary. The executive summary provides a synopsis of the project's potential impacts. It identifies, in an overview fashion, the project under consideration and its objectives. The section also summarizes the project's impacts and mitigation measures and contains a summary analysis of the alternatives to the project.

1. Introduction. The introduction includes the purpose of an EIR and procedural information.

2. Project Description. The project description includes the project background, project location and setting, project objectives, and project characteristics, including construction, operation, and maintenance activities. The section also includes a summary of the necessary permits and approvals for the project.

3. Environmental Setting, Impacts, and Mitigation Measures. This chapter describes the environmental setting and identifies impacts of the proposed project for each of the following environmental resource areas: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hydrology and Water Quality; Land Use and Planning; Recreation; and Tribal Cultural Resources. Mitigation measures to reduce significant impacts of the proposed project to the lowest level feasible are presented for each resource area.

4. Alternatives Analysis. This chapter presents an overview of the alternatives and describes and analyzes the alternatives to the project, including the No Project Alternative.

5. Other CEQA Considerations. This chapter includes a discussion of issues required by CEQA that are not covered in other sections. This includes significant unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, potential secondary effects caused by the implementation of the mitigation measures for the project, and effects found not to be significant.

6. References. This chapter provides a list of resources used and referenced in the preparation of the Draft EIR.

7. List of Preparers. This chapter provides a list of the individuals who contributed to the preparation of the Draft EIR.

The environmental analyses in this EIR are supported by the following appendices:

- Appendix A: NOP, Initial Study and Scoping Comments
- Appendix B-1: Hydraulic Analysis
- Appendix B-2: Excavation and Vegetation Estimate Methodologies
- Appendix B-3: Existing Conditions and Project Components Figures
- Appendix C: Geomorphic Assessment

CHAPTER 2
Project Description

The County of Inyo (County) is the project applicant proposing to construct the Owens River Water Trail (ORWT or project) to allow public recreational access solely for non-motorized watercraft on an approximately 6.3-mile segment of the Owens River. The extent of the river to be used for the water trail represents approximately 10 percent of the length of the newly rewatered, 62-mile Lower Owens River. The proposed project would develop facilities for recreational users to enter and exit the river and allow unimpeded navigation for non-motorized watercraft, such as kayaks, stand-up paddle boards, and canoes. In addition to providing recreational access, the proposed project would provide instream and riparian habitat benefits and improve water quality. The proposed project would be a first-of-its-kind designated water trail in the western United States and would benefit recreational opportunities in the Owens Valley region by offering a gentle stretch of river with controlled flows that is ideal for safe paddling.

2.1 Project Overview

2.1.1 Project Background

Since 1913, 56 miles of the Owens River has been a mostly dry channel due to diversion of the lower section of the Owens River by the City of Los Angeles into the Los Angeles Aqueduct. Prior to diversion, the City of Los Angeles' Hydrographers recorded flow in the river of 425 cubic feet per second (cfs) on average, with peak flows at well over 3,000 cfs. In December 2006, a perpetual flow of 40 cubic feet per second was established along the length of the formally dry stretch of river. The newly rewatered Lower Owens River is the centerpiece of the Lower Owens River Project (LORP). The LORP guarantees a minimum flow of 40 cfs with additional springtime water releases indexed to forecasted snowmelt runoff. In years when runoff from snow melt is predicted to be normal or higher, a 200 cfs flushing flow is sent down the river in the early to late spring.

The 78,000 acre LORP involves four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area, the Blackrock Waterfowl Management Area, with seasonal flooding and land management to benefit wetlands and waterfowl; and (4) maintaining several off-river lakes and ponds.

The LORP allows the County a range of new recreational opportunities. With cooperation from LADWP, the County prepared a preferred Draft Recreation Use Plan for the Lower Owens River (January 2013). While the County has not formally adopted this plan, it serves as an advisory document for recreational activities along this segment of the Owens River. Based on community input, the Draft Recreation Use Plan identified boating as the number one recreational activity that residents would like to participate in along the Lower Owens River. The ORWT would create new recreational opportunities for local residents and visitors, consistent with the Draft Recreation Use Plan.

2.1.2 Project Location and Setting

The ORWT would extend along approximately 6.3 miles of the Lower Owens River in the Sierra Nevada range, just east of Lone Pine, California, as shown in **Figure 2-1,** *Regional Location*. The proposed project would encompass the stretch of river between Lone Pine Narrow Gauge Road and Highway 136 [California State Route (SR)], as shown in **Figure 2-2,** *Project Location*. The project area, defined by the perimeter of the Lower Owens River floodplain from Lone Pine Narrow Gauge Road south to SR 136, is largely a natural setting and is owned by the Los Angeles Department of Water and Power (LADWP). The floodplain varies in width from 0.12 to 0.33 miles. Dominant floodplain vegetation includes saltgrass meadow and tree and shrub willow woodland. Large woody debris (LWD), resulting from the natural loss of limbs and trees in the project area, occupies the channel and can snag floating vegetation creating floating mats, islands, and occlusions. A number of informal roads parallel the river on sandy, chalky bluffs. A few dirt roads enter the floodplain from the bluff. In 2013, a large range fire swept through about 50 percent of this floodplain. See Photo 1 for typical river conditions.

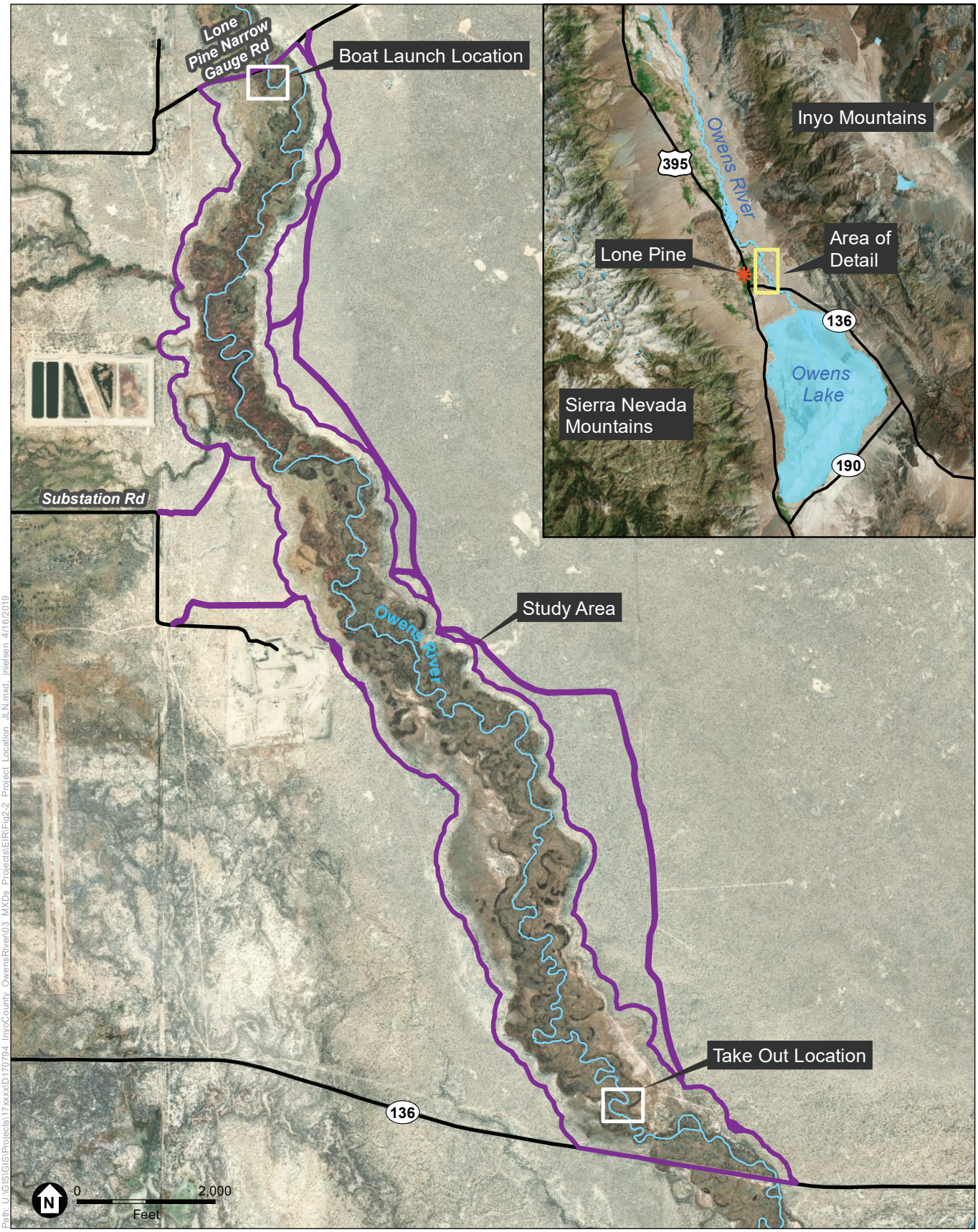
The project area is designated Natural Resources (NR) in the County Draft General Plan Update and is zoned Open Space – Recreational (OS-R) in the County Draft Zoning Code. Surrounding land uses include floodplains, agricultural land used for cattle grazing, and an electric transmission utility corridor. In addition, Lone Pine is located approximately 1.5 miles west of the boat launch facility, where driving times from the center of Lone Pine would be less than 10 minutes to reach either the beginning or end of the ORWT.

SOURCE: ESRI

Owens River Water Trail

Figure 2-1
Regional Location

ESA



Owens River Water Trail

SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Figure 2-2
Project Location

ESA

Photo 1: Bluffs and river channel with Eastern Sierras beyond.

2.2 Project Objectives

Section 15124(b) of the California Environmental Quality Act (CEQA) Guidelines requires a project description to contain a statement of a project's objectives and the underlying purpose of the project. The County's underlying purpose is to create a water trail to allow recreational access for non-motorized watercrafts on a portion of the Owens River. The County has identified the following objectives for the proposed ORWT:

- Provide all-abilities access to the ORWT as a recreational resource;
- Provide recreational and educational opportunities for the surrounding community and visitors;
- Implement restoration activities for the natural habitats and species of the Owens River to be consistent with the restoration efforts of the LORP. The LORP calls for the creation and enhancement of natural habitats to be consistent with the needs of certain habitat indicator species through the application of appropriate flow and land management practices; and
- Remain consistent with the habitat, environmental, economic, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan, which include:
  - Continue to prioritize LORP goals and the ecological restoration of riparian habitat over recreation;
  - Minimize conflict between recreation, ranching and LADWP operations by appropriately locating improvements, installing signs, cattle guards, and gates where needed and by improving some roads;
  - Protect existing cultural resources, artifacts and areas by collaborating with local Tribes and steering recreation away from sensitive areas; and
  - Place clear and frequent signage in strategic locations to outline area use guidelines and restrictions, and to share information about existing operations.

2.3 Project Components

The ORWT would provide recreational access to an approximately 6.3-mile section of the newly rewatered, 62-mile Lower Owens River. The proposed project would result in the development of facilities for recreational users to enter and exit the river and would allow unimpeded navigation for non-motorized watercraft, such as kayaks, stand-up paddle boards, and canoes. Specifically, the proposed project would include construction and maintenance of the water trail and boat launch and take-out facilities, which would provide limited amenities in addition to access to the river. In discussing the individual project components, the terms "water trail" and "boat launch and take-out facilities" will be used, and while referring to the whole project the term ORWT or project will be used. Technical analyses were performed to evaluate the ORWT with respect to hydraulic and geomorphic response to the project, which are presented in Appendices B-1 and C, respectively. The project components are shown in **Figure 2-3**, *Proposed Project Overview*, and are discussed in greater detail below.

2.3.1 Water Trail

Currently, sections of the Lower Owens River corridor are non-navigable due to the channel being partially or fully obstructed by emergent vegetation and associated sediment accumulation as well as by large and small woody debris. The proposed project would construct and maintain a navigable water trail, a minimum of 15 feet wide in maintained areas, along the approximately 6.3-mile stretch of the Lower Owens River to provide a new recreational opportunity in the region. The water trail would be utilized by local residents and visitors to the region and would allow for users to paddle non-motorized watercraft downstream while enjoying views of the surrounding floodplains and the highest crest of the Sierra Nevada and Inyo Mountain ranges. Water trail launch and takeout facilities would be developed to facilitate use by disabled paddlers; refer to Sections 2.3.2 and 2.3.3 below. Due to the Owens River's controlled and relatively low flow (i.e., 40 to 50 cfs), with implementation of the project, in-channel velocities are estimated to be around 0.5-0.6 mph. At this relatively slow pace, the water trail would provide a safe and accessible recreational resource.

In general, recreation demand is high in the Eastern Sierra, and the Eastern Sierra InterAgency Visitor Center, which is located approximately 2.5 miles from the ORWT take-out facility, accommodates upward of 300,000 visitors each year.[1] However, estimating future recreation demand for the ORWT is a complex task. Based on input from professionals in the tourism industry, highway surveys, and research on recreational demand, Inyo County estimates that over time annual use could reach approximately 4,400 launches, which includes private parties as well as concessionaires.[2,3] The estimate takes into account the fact that the ORWT would be available year-round since the river flows at a predictable minimum 40 cfs year-round even in the middle of a drought; seasonal habitat flows released from the River Intake, 43.65 miles upstream are typically 110 cfs and as currently managed have not exceeded 325 cfs. Seasonal habitat flows volumes are attenuated due to evapotranspiration (ET), and a 325 cfs flow released from the Intake resulted in 190 cfs flows in the project area. In addition, the river is currently open to fishing and boating year-round.

In order to establish the navigable water trail for non-motorized watercraft, the proposed project would remove existing river occlusions by manual and machine methods, as described in greater detail below in Section 2.4, Construction. While the proposed project would require clearing activities, the project would keep the river channel in its natural form as much as possible and

[1] Inyo County staff conferred with Eastern Sierra InterAgency Visitor Center Director, Matt Helt, email dated January 23, 2017.

[2] Inyo County staff conferred with: Inyo National Forest Recreation Officer, Shane Hoskins; Sierra Nevada Conservancy's Eastern California Representative Danna Stroud; Inyo County's Park Manager, Steve Graves; Lone Pine Chamber of Commerce's, Kathleen New; and Eastern Sierra InterAgency Visitor Center Director, Matt Helt. In addition, documents used included: 2016 Outdoor Recreation Participation Topline Report, developed by the Outdoor Foundation; 2016 California Travel Impacts by County, sponsored by Visit California; Bureau of Reclamation's publication, "Estimating Future Recreation Demand: A decision Guide for the Practitioner."

[3] A single concessionaire with a six-place kayak/canoe trailer can provide up to three daily departures on the weekend and two departures on weekdays during the high season, April through September, potentially serving 2,600 users.

would only remove the minimum amount of vegetation required to allow for the passage of non-motorized watercraft and small maintenance craft.

2.3.2 Boat Launch Facility

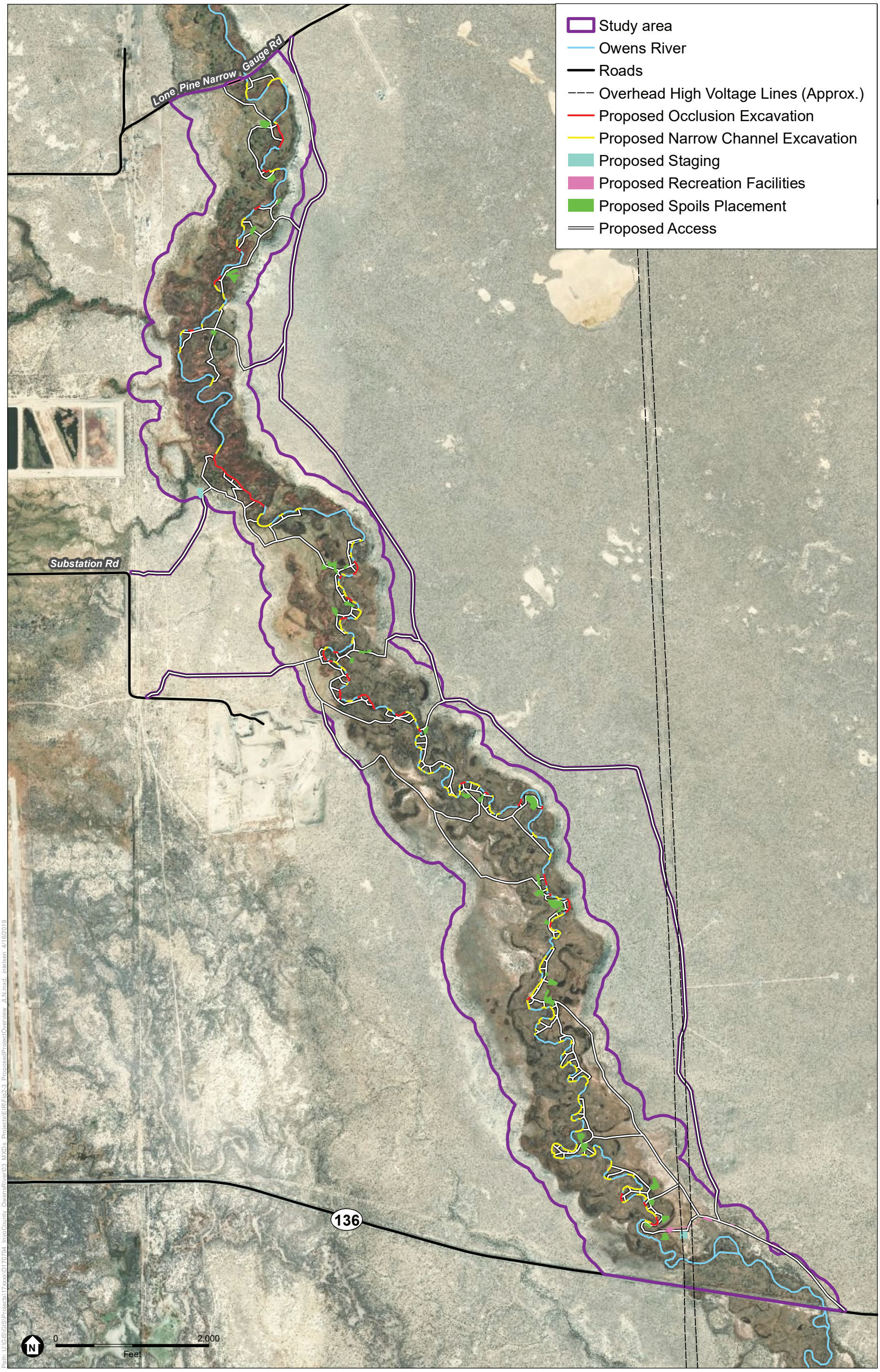
In addition to establishing the water trail within the existing river channel, the proposed project would include the construction of a boat launch facility along the eastern river bank adjacent to Lone Pine Narrow Gauge Road, as shown in **Figure 2-4**, *Proposed Boat Launch Facility.* Access to the boat launch facility from Highway 395 would be provided off of Lone Pine Narrow Gauge Road, which would connect to a short two-lane driveway apron that transitions to a single-lane, all-weather surface drive and turnaround as shown in Figure 2-4.[4] The drive would be approximately 12 feet wide by 120 feet long, and the turnaround would provide a 38-foot exterior radius, which would accommodate an 8-passenger van towing an 8 kayak/canoe trailer. A gravel, or other all-weather surface, staging area would be located on the northwestern portion of the turnaround which would connect to the boat launch by a pedestrian path, where users of the water trail could unload their watercraft and/or wait for their turn to access the boat launch. The path leading down to the boat launch would be approximately five feet wide and 20 feet long and would also be accessible for wheelchairs, with a maximum longitudinal slope of five percent and a maximum cross slope of two percent.

The boat launch, which would be adjacent to the river, would consist of a ramp or dock or similar appurtenance to allow all-abilities loading and unloading of watercraft. An inlet would be designed to provide a still-water boat launch access point. A gently sloping hardened ramp (e.g., pre-cast concrete or vinyl, or gravel/geotextile) would allow all-abilities entry at water surface elevations corresponding to flows from 40 cfs to 110 cfs. The boat launch would be a maximum of 500 square feet. Assorted boulders strategically placed would provide bank stabilization. Native vegetation would be used for biotechnical bank stabilization in addition to boulder placement. The boat launch facility would allow easy and safe access to the water trail for people of all abilities, including the disabled through the provision of transfer step, transfer board, grab bars and/or surface textures.

Parallel parking would be provided along the Lone Pine Narrow Gauge Road shoulder at the top of the ORWT. The road shoulder would be graded and resurfaced with an all-weather surface (such as gravel) to create approximately 1,090 feet of parallel parking spaces.

To support the boat launch facility, a prefabricated, contained vault restroom would be installed on the northeastern portion of the turnaround. The restroom would include a vault toilet as well as a changing area in proximity to the staging area that meets the design criteria of the Americans with Disabilities Act (ADA). The specifications for the vault toilets would require a design that is flood-proof and can be used in fully-saturated soils. The preliminary location of the vault toilet is shown in Figure 2-4 and may be refined during project design; however, the vault toilet would be sited in an area above the 200-cfs inundation zone. The toilets would be regularly maintained by the County and pumped out so the volume of waste in the toilets at any time would be relatively small.

[4] All-weather surface could consist of gravel, geo-grid, grass mesh, or other stable but pervious surface.

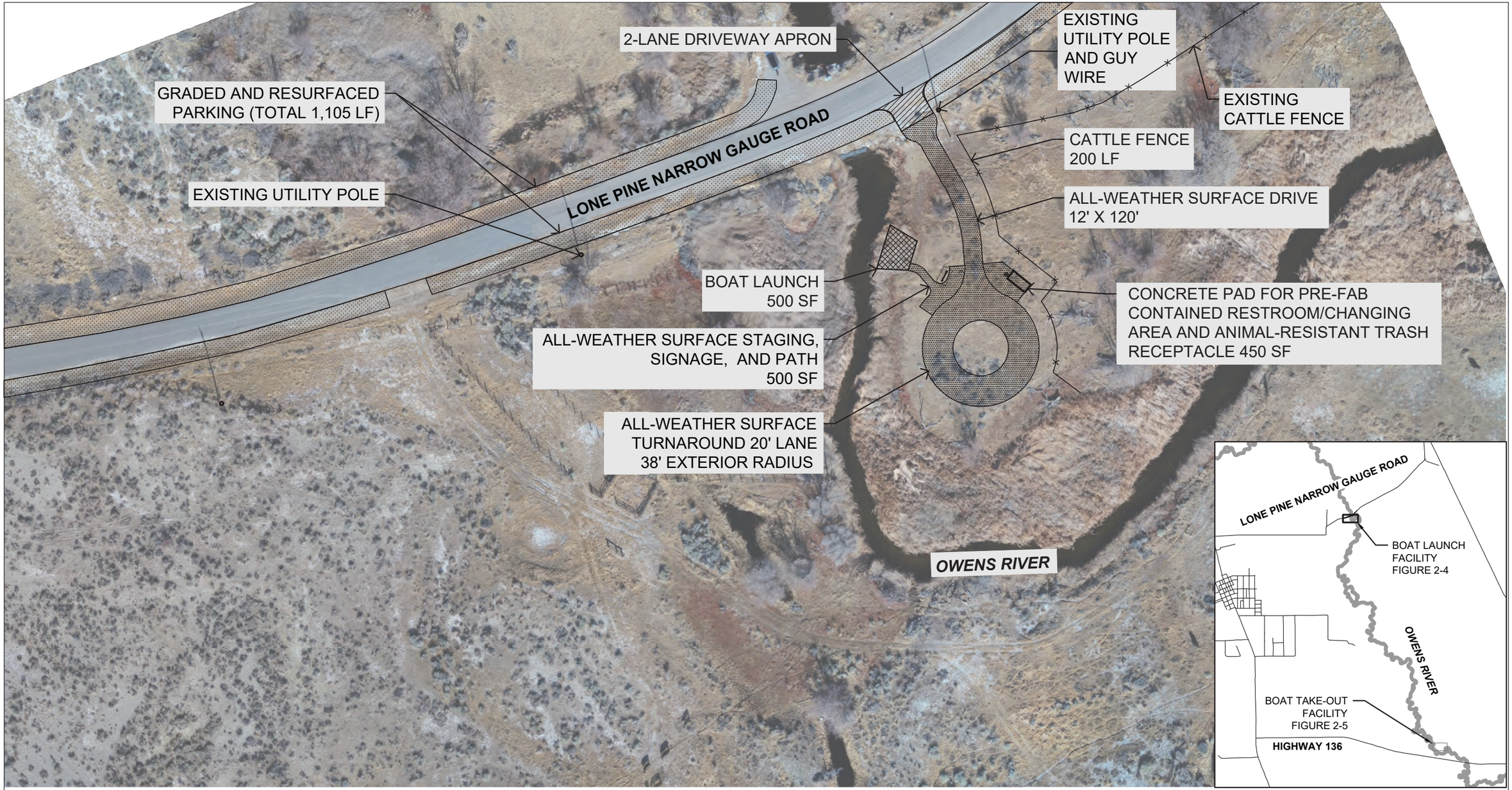


SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 2-3
Proposed Project Overview

ESA



SOURCE: ESA, 2019

Owens River Water Trail

Figure 2-4
Conceptural Boat Launch Facility

ESA

The boat launch facility would also include wildlife-resistant trash receptacles, and weather-resistant interpretative and safety sign kiosk. Cattle fencing would be installed around the eastern perimeter of the amenities to separate the boat launch facility from the existing, surrounding grazing activities.

2.3.3 Boat Take-Out Facility

Approximately 6.3 miles downstream of the boat launch facility, the boat take-out facility would be constructed in a partially disturbed area northwest of the Owens River Bridge (No. 48-0002) abutment on the east side of the river, as shown in **Figure 2-5,** *Proposed Boat Take-out Facility*. The boat take-out facility would allow vehicle access for recreational users to retrieve boats and equipment at the end of the trail. Access to the boat take-out facility would be provided off of SR 136, which would connect to a two-lane driveway apron and cattle guard that transitions to an existing single-lane access road (refer to Figure 2-5). The road would be approximately 15 feet wide and about 2,500 feet long, with a few passing shoulders and three cattle guards. Once closer to the river, the road would transition into a 200-foot long drive leading to a turnaround, which would be similar in design to the boat launch facility. An all-weather surface staging area would be provided along with a concrete pad that serves as a foundation for a prefabricated vault restroom, wildlife resistant trash receptacles, and a tube-type donation station (Iron Ranger). Weather resistant signage would be installed on the western portion of the turnaround. As described for the boat launch, the restroom would include a vault toilet as well as a changing area in proximity to the staging area that meets the design criteria of the ADA. The specifications for the proposed vault toilets would require a design that is flood-proof and can be used in fully-saturated soils. The preliminary location of the vault toilet is shown in Figure 2-5 and may be refined during project design; however, the vault toilet would be sited in an area above the 200-cfs inundation zone. The toilets would be regularly maintained by the County and pumped out so the volume of waste in the toilets at any time would be relatively small. An all-weather surfaced path and bridge, which would be wheelchair accessible, would lead from the staging area to the boat take-out. A bay inlet would be constructed to allow a still-water river exit. A ramp similar to the boat launch would be constructed to allow an all-abilities boat take-out facility at flows ranging from 20 cfs to 110 cfs. The boat take-out would be a maximum of 500 square feet with assorted boulders to provide bank stabilization.

Parking would be provided in a parking area consisting of approximately 488 linear feet along the all-weather surface road. Additional structured parking located in the powerline right-of-way would require LADWP approval through a special use permit. Pedestrian paths between the parking area and the staging would also be constructed. As with the boat launch facility, cattle exclusion fencing would be installed along the northern boundary of the facility. All improvements associated with the boat take-out facility would be constructed outside the right-of-way of SR 136.

2.3.4 Signage

As indicated above, weather resistant signage protected by a kiosk would be included at the boat launch and take-out facilities, which would convey water and wildfire safety information, rules, emergency contacts and interpretative information. The County would coordinate with Tribes, LADWP, law enforcement, and local ranchers regarding the information to be included on the signs. Additional signage could be provided along the water trail itself, which could include, but not be limited to, topics such as the region's ranching history, history and information on the local Native American tribes, and surrounding scenic views. While the inclusion and location of signs along the water trail is undecided at this time, in order to analyze maximum potential impacts, it is assumed that signposts would be installed every half mile of water trail. Reflective mileage signposts would be installed every half-mile as a safety precaution, allowing a known location if rescue were to be required. A prominent sign would be installed above the river just before the takeout to alert paddlers of the location of the takeout (i.e., which side of the river and the number of feet remaining).

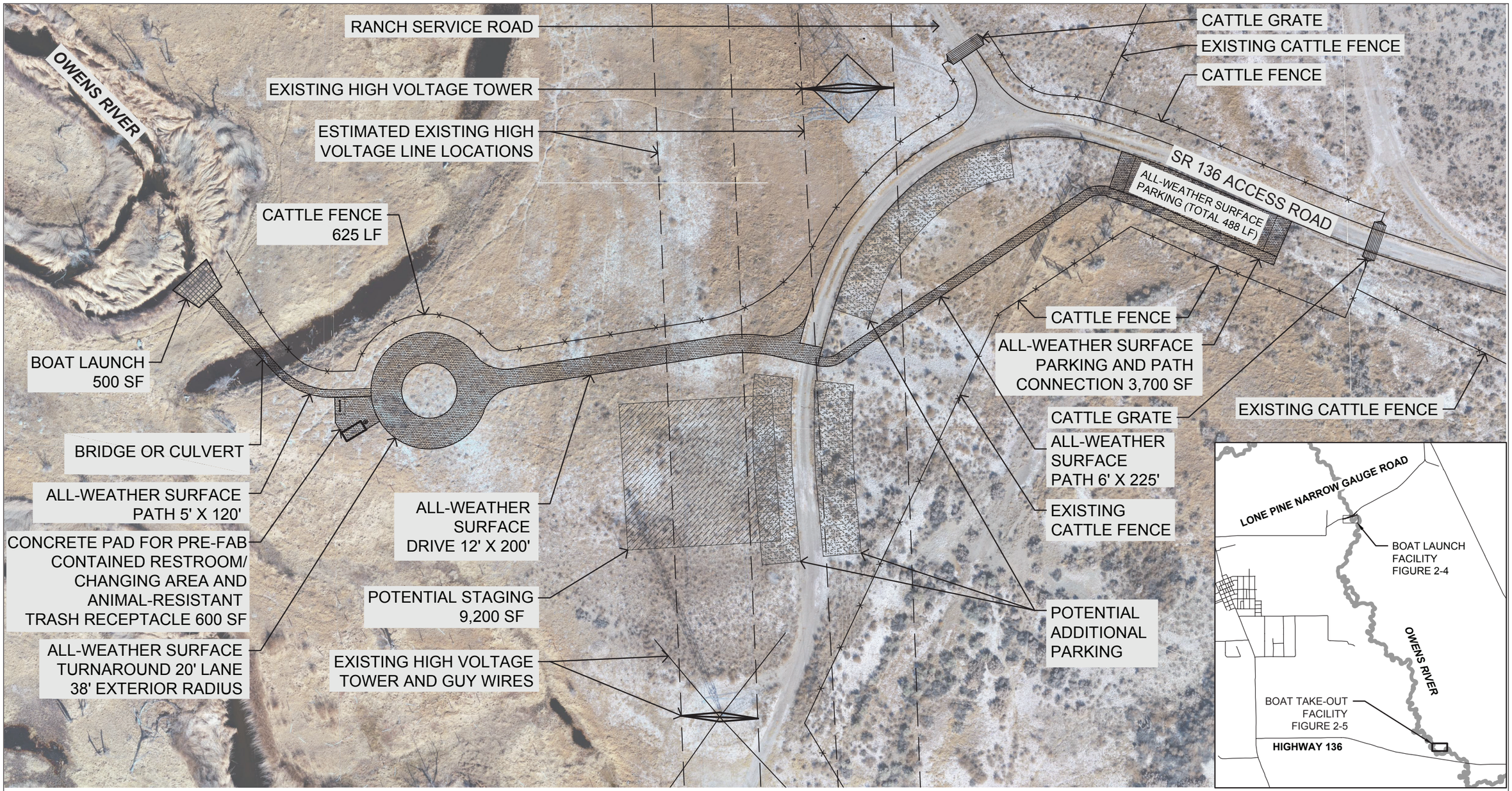
2.4 Construction

Project construction is anticipated to begin in December 2019. Construction of the ORWT would consist of two phases: 1) in-channel work for the water trail, and 2) construction of the boat launch and take-out facilities. Construction for the water trail and boat launch and take-out facilities would be undertaken by one or more specialist contractors and may occur in separate years with the in-channel work likely commencing before construction of the boat launch and take-out facilities. Construction of the water trail is anticipated to require the use of a combination of in-channel and land-based equipment while construction of boat launch and take-out facilities features is anticipated be constructed solely with land-based equipment. For example, the types of equipment could include amphibious mowing equipment, amphibious long reach excavator, excavator, dump truck, skid steer, and all-terrain utility vehicles. **Figure 2-6a**, *Examples of Amphibious Construction Equipment*, and **Figure 2-6b**, *Examples of Terrestrial Construction Equipment*, show examples of the types of amphibious and terrestrial construction equipment which could be used for construction of the proposed project. Construction activities and timeframes for each project component are described in greater detail below.

Construction Activities

Water Trail

Construction associated with the water trail would involve the following activities to remove occlusions and establish a single continuous navigable waterway in the dominant channel: 1) clearing of emergent vegetation to a width of approximately 15 feet; 2) relocation of large woody debris (LWD); and 3) removal of bulrush and cattail root masses and sediments and excavation of a short channel segment. The locations of the existing occlusions to be removed are shown in Figure 2-3.



SOURCE: ESA, 2019

Owens River Water Trail

Figure 2-5
Conceptual Boat Take-Out Facility

ESA

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Amphibious vegetation management: Truxor DM 5000

Amphibious long reach excavator: Long Reach High Reach Marsh Buggy

D170794.00

SOURCE: ESA, 2019

Owens River Water Trail

Figure 2-6a
Examples of Amphibious Construction Equipment

ESA

Tracked dump truck: Morooka MST 3000 VD

Tracked skid steer loader: CAT 259D

D170794.00

SOURCE: ESA, 2019

Owens River Water Trail

Figure 2-6b
Examples of Terrestrial Construction Equipment

ESA

Clearing of emergent vegetation would occur by one or a combination of hand labor and equipment. Hand labor by volunteer groups coordinating with Inyo County, LADWP, and appropriate permitting agencies would use hand tools consisting of saws, sickles, rakes, and winches for removal of tules (hardstem bulrush, *Schoenoplectus acutus*). Paddle boats and low ground pressure all-terrain utility vehicles would support hand-clearing efforts. Boat-based or amphibious equipment would be utilized as practicable to clear vegetation. This equipment generally mows or masticates emergent vegetation. It is estimated that between 6,462 cubic yards (cy) and 8,530 cy of emergent vegetation would be cleared from the river channel. (Appendix B-2, Excavation and Vegetation Estimate Methodologies, describes the methodology used to estimate the amount of vegetation that would be removed, including assumptions about density of tule stalks ranging from 25 to 33 percent. The methodology produces a conservative estimate because aerial imagery is used to identify the existing areas of tules to be removed and as such includes the overhang of stalks and leaves into the channel. This results in an overestimation of the footprint currently occupied by tules to be removed.)

At occlusions where emergent vegetation is growing across the channel, light excavation to a width of 15 feet and an average depth of 1 foot would occur to remove root masses. In-channel excavation is currently anticipated to occur roughly between river mile (RM) 45.1 and RM 45.3 (see Figure 2-3). In this area, the river channel is comprised of a series of several disjunct channel segments, oxbow meanders, and isolated side channels. While the geomorphic cause of this channel condition is unknown, it is thought to be caused by relic beaver dams. The project would re-establish a single-thread channel through this reach. In total, excavated materials from removal of the occlusions and channel excavation are anticipated to result in up to approximately 5,200 cy of spoils material, which would most likely consist of a mixture of organic debris (e.g., tubers, roots, and shoots of tules), muck, and mineral soil. Based on input from contractors and field observations, spoils would likely consist of approximately 20 to 50 percent mineral soil by volume. (Appendix B-2, Excavation and Vegetation Estimate Methodologies, describes the methodology used to estimate the amount of excavation that would occur. Appendix B-3, Existing Conditions and Project Components Figures, provides a series of figures that show river miles, occlusions, and project components along the approximately 6.3-mile project area.)

Combining the material from the in-channel excavation with the vegetation removal, the project would result in approximately 11,662 to 13,730 cy of wet material.[5] It is important to note that the stated volumes and depths of spoils are "wet" and do not separately consider mineral soil from muck and vegetation. In practice, spoils piles would "deflate" as water drains from the soil, muck, and vegetation, and spoils subsequently dry out and decompose. Based on results of the Experimental Tule Control Project, which was conducted from 2013 to 2019 and included three seasons of tule removal and six years of monitoring, the County estimates initial deflation to be 40 to 60 percent, such that dry spoils volume would be 40 to 60 percent less than initial wet

[5] Approximately 2,380 linear feet of occlusions and approximately 1,890 square feet of narrow channel would be removed from the area of relic beaver dams (occlusions 8-11 on the figures provided in Appendix B-3 of this EIR). The combined volume of emergent vegetation and material from channel excavation would be approximately 5,000 cy of material or approximately 27% of the total materials to be generated by the project.

volume. In addition, the project area is used for grazing, and cattle graze on the spoils piles when wet and fragment the dry material through trampling, bedding, and foraging on the litter.

Spoils generated from the vegetation removal and excavation at the occlusions would be transported to spoils placement areas using existing informal dirt ranch roads along the river (see Figure 2-3). Spoils placement areas would vary in geographic location as well as size, ranging from approximately 2,650 to 67,000 square feet in size covering a total of approximately 6.66 acres. The majority of the 27 spoils areas would be located within proximity to the river segments from which occlusions would be removed. Spoils areas were identified based on certain criteria, including locations above the 200-cfs inundation zone to ensure that spoils would not wash back into the river channel. In addition, the spoils areas excluded sensitive habitats and wetland areas. The areas shown on Figure 2-3 were based on vegetation and floodplain mapping; actual boundaries may vary slightly during project implementation based on field conditions.

Assuming use of all of the spoils areas and placement of material at the closest spoils areas, the depth of emergent vegetation could range from 0.1 to 3.2 feet in depth, with an average depth of approximately 0.9 to 1.2 feet, depending on the estimated density of tules.[6] With regard to the material from the in-channel excavation, spreading the approximately 5,200 cy of material across the spoils areas could result in a depth ranging from 0.04 to 1.1 feet, with an average depth of approximately 0.4 feet. In combination, the vegetation and material from channel excavation spread on the spoils areas could result in piles ranging from 0.6 to 3.65 feet, with an average depth of approximately 1.6 feet. The actual depth of piles may vary slightly in the field; methods for distributing spoils would be based on actual materials excavated and the objective to spread materials as thinly as possible to encourage deflation and the recolonization of spoils areas by native vegetation.

The estimated acreage of spoils by depth category is shown in **Table 2-1**. Considering just in-channel excavation, approximately 98 percent of spoils areas would have piles less than 12 inches. Considering just emergent vegetation, approximately 87 to 95 percent of spoils areas would have piles less than 18 inches. To the extent practicable, the emergent vegetation would be placed on top of the muck and mineral soils to deter the establishment of weedy species. As such, when considering emergent vegetation piled on top of excavated spoils, approximately 76 percent of spoils areas would have piles less than 18 inches. Where spoil depths would exceed 12 inches, material would be wind-rowed (i.e., placed as low berms) to leave uncovered areas of saltgrass (*Distichilis spicata* or similar) or native bunchgrasses to ensure that a stock reserve of native vegetation would remain intact to colonize the deeper piles. Spoil layers less than 12 inches, where saltgrass is expected to penetrate the layer and begin recolonization in a growing season, would be "contoured" (i.e., placed and smoothed in such a manner as to blend in with adjacent terrain, while not blocking local flow paths.

[6] Assuming the lower density of vegetation (25% occupied space) the depth of emergent vegetation in the spoils areas would range from 0.1 to 2.4 feet, with an average depth of approximately 0.9 feet. Assuming the higher density of vegetation (33% occupied space) the depth of emergent vegetation in the spoils areas would range from 0.1 to 3.2 feet, with an average depth of approximately 1.2 feet. See Appendix B-2.

TABLE 2-1
ESTIMATED DISTRIBUTION OF WET MATERIALS PLACED AT SPOILS AREAS BY DEPTH (ACRES)

	Spoils 0-6"	Spoils 6+"-12"	Spoils 12+"-18"	Spoils 18+" and greater
Excavation Spoils	3.83 ac (58%)	2.73 ac (41%)	0.1 ac (1%)	--
Emergent Vegetation (25% density)	3.58 ac (54%)	1.68 ac (25%)	1.08 ac (16%)	0.32 ac (5%)
Emergent Vegetation (33% density)	2.47 ac (37%)	2.29 ac (34%)	1.02 ac (15%)	0.88 ac (13%)
All Spoils: Excavation and Emergent Vegetation	--	2.85 ac (43%)	2.25 ac (34%)	1.56 ac (23%)

Note: The amount of spoils areas with a given depth of material is provided in acres with percentage of the total 6.66 acres of spoils areas provided in parentheses. Percentages may not total 100% on each row due to rounding.
Source: ESA, 2019.

LWD blocking the navigable channel would be relocated to nearby banks or inlet embayments. Small LWD pieces would be moved manually by hand or with winches. Larger LWD pieces would be relocated by shore-based equipment and lodged in emergent vegetation out of the main channel. Due to relatively small fluctuations of water surface elevation and small variation in channel velocities, LWD is not currently envisioned as requiring anchors or ballast. See Photo 2 for typical example of existing in-channel LWD.

Construction equipment for the in-channel work associated with the water trail would consist of or be similar to, but not be limited to: standard excavator with low ground pressure appurtenances (e.g., timber crane mats, marsh mats, etc.), amphibious excavator, wheeled or rubber tracked dump trucks (e.g., "Marookas"), tracked or wheeled skid steer loaders, and all-terrain utility vehicles. The use of these types of equipment are evaluated in this EIR.[7]

Figure 2-3 illustrates the locations for stockpiling and staging that would be used during construction of the proposed project. Access for the in-channel excavation would be located off of Sub-Station Road. The access route would follow existing dirt roads and would be approximately 0.75-miles long. No road improvements are anticipated to be required for the mobilization of proposed equipment. The construction contractor would be required to utilize industry best management practices to minimize sediment movement onto Sub-Station Road (e.g., stabilized construction entrance). The staging area would be approximately 9,000 square feet and would be located on an existing dirt road segment.

[7] The contractor would make the final determination as to which equipment would be most efficient for the excavation, create the least impact, and which would minimize mobilization efforts.

Photo 2: Typical example of existing in-channel LWD

Boat Launch and Take-out Facilities

The boat launch and take-out facilities would require limited grading, construction of roads/parking, placement of concrete pads (2), and construction of wheelchair accessible launch facilities. Grading plans for the boat launch and take-out facilities would be designed to minimize excavation quantities as a means to reduce construction haul trips. Excavated materials would be balanced on-site by placement in select locations. While the design of the in-channel launch facilities is still conceptual, it is estimated that approximately 500 cubic yards of river bank material would need to be excavated. Suitable excavated material may be utilized as road base (i.e., fill); non-suitable material would be hauled to the spoils placement area. All-weather surface material for access, turnaround, ramp, etc. would be placed on grade and would not require excavation activities. Construction of the boat launch facility is estimated to require approximately 220 cy of aggregate while the boat take-out facility would require approximately 1,000 cy of aggregate.

Construction equipment required for the boat launch and take-out facilities would consist of, but not be limited to:

- bulldozer
- skip loader
- tracked or wheeled skid steer loader
- excavator
- roller compactor

Construction access for the boat launch facility would be located off of Lone Pine Narrow Gauge Road. The construction access route would follow the alignment of the gravel access road to be developed for the boat launch facility. New access would be developed along approximately 200 feet, which would consist of limited clearing of vegetation and minimal placement of gravel as needed to allow access for construction equipment. The staging area would be located at the terminus of one branch of the access route. The staging area would be up to 3,500 square feet. Construction access for the boat take-out facility would be located off of SR 136. The construction access route would follow an existing gravel/dirt road and would be approximately 0.5-miles long.

The staging area would be situated in an area, which is highly disturbed and is located adjacent to an existing gravel/dirt road. The staging area would be approximately 9,200 square feet. For both facilities, the construction contractor would endeavor to minimize area disturbed for access and staging. Post construction, the staging areas would be restored to its existing condition and seeded with upland species native to the area, similar to the boat launch facility. In addition, the contractor would rip, disk, or grade other areas of ground disturbance. Temporary floodplain access roads would be treated in a manner that stabilizes, restores, and camouflages the route to prevent future use.

Typical Accessible Launch Features

The boat launch and take-out facilities would be designed to accommodate users with disabilities. The launch facilities would consist of approach and dock components. Access route and boat launch features would include:

- Firm and stable surface directly connected to the water,
- Gradual slopes in accordance with the United States Access Board Standards for trail running slope.
- Access routes cross slopes of 2% or less.
- Open area sufficient to turn around a 16ft or larger canoe, kayak, etc.
- Textured surfaces to provide extra traction for wet conditions.
- Surface gaps maximum of 0.5 inches to avoid catching wheels and casters of wheelchairs.
- Grab bars for transfer between boat and wheel chair.
- Transfer steps or boards that support a user and allow them to slide into their boat.
- A changing area; in this case the space within an ADA compliant restroom.

Construction of these features may require a contractor familiar with materials and methods appropriate to accessible boat launches.

Construction Schedule

Construction could commence in 2019 and would occur over an approximately seven-month period, any time between the months of September and March (considered a work season). Construction activities would generally avoid the spring and summer months to avoid bird nesting season. However, construction of the boat launch and take-out facilities may occur any time of year independent of the in-channel work. If construction were to occur during the nesting season a qualified biologist would be on site to conduct a pre-construction survey and monitor. Construction activities would occur Monday through Friday from 7:00 a.m. to 5:00 p.m. in accordance with the County Ordinance. In the circumstance of inclement weather or to maintain project schedule, the contractor, may seek approval from the County to extend construction days to occur during weekends. In addition, the construction schedule may be required to be extended or spread over two work seasons to account for unforeseen circumstances that may arise. Specific construction timeframes would be determined by the County and the construction contractor as the work progresses.

2.5 Operation and Maintenance

It is anticipated that the water trail would be ready for use by 2021. Once built, operation or use of the water trail and associated facilities is anticipated to occur over approximately the next 20 years. Adhering to LADWP's policy, use of the ORWT would occur during daylight hours. While the facilities would not be locked at night, signage would be installed limiting parking to daylight hours and stating that use of the ORWT during nighttime hours would be prohibited. Furthermore, improvements would be minimal, and operation of the ORWT as a recreational

facility would not authorize other recreational uses, such as camping or fires, along the river channel. A list and description of the surrounding area's campgrounds, including directions, would be provided as a Quick Response (QR) code on interpretive signage installed with the boat launch and take-out facilities. As stated previously, the County would provide regular maintenance and pump out of the proposed vault toilets at the boat launch and take out.

Ongoing maintenance activities are anticipated to maintain the integrity of the water trail as well as the boat launch and exit facilities. Manual work, as described above, and/or mechanical clearing activities using watercraft such as a Truxor 5000 or other multi-functional amphibious machine for cutting and collection of water plants would be implemented on an as-needed basis to remove emergent vegetation below the waterline from the channel in order to maintain an open, navigable water trail. Maintenance activities would remove vegetation above, and up to 3 feet below the water surface elevation to maintain the integrity of the water trail at 15 feet wide. Maintenance would consist of vegetation management only, and would be limited to the harvest of shoots, stalk, and leaves and would not include any excavation of the channel bed. The technique of underwater cutting deprives the rhizome mass of oxygen which otherwise would be translocated down emergent stems.

The maintenance process would include the following steps:

- Emergent vegetation is removed by hand or mechanically with a Truxor 5000, or other multi-functional amphibious machine for cutting and collection of water plants.
- Cut vegetation floats downstream and collects at a designated location blocked by a floating boom.
- Vegetation is removed from the channel either by hand or mechanically with a compact tracked loader/excavation and/or all-terrain utility vehicle.
- Vegetation is spread in areas that meet criteria described below.

Maintenance is planned to occur during late fall and early winter to coincide with dormancy, at which time shoots do not resprout when cut. Cutting of shoots at this time drowns the rhizomes, diminishing plant vigor and inhibiting future regrowth. As such, the amount of emergent vegetation needing to be cleared in the first year would be approximately 10 percent of the volume of vegetation initially cleared during project construction (approximately 600 to 800 cy) and would lessen with each successive year as the amount and density of regrowth decreases over time.

The emergent vegetation removed during annual maintenance would be piled in areas at least 15 feet from the water edge and above the 200-cfs inundation zone, which are characterized by saltgrass and without mesic vegetation. During maintenance activities, the emergent vegetation removed from the channel would not be placed on top of spoils associated with initial project construction or subsequent maintenance to avoid interference with the integration and recolonization of native species in previously placed spoils.

Table 2-2, **Anticipated Maintenance**, shows the anticipated duration, frequency and days of effort to maintain the channel. Level of effort associated with maintenance would be reviewed and revised based on efficacy in controlling emergent vegetation growth and available budget.

TABLE 2-2
ANTICIPATED MAINTENANCE

Year	Duration and frequency	Total days of effort
1 (post -construction)	10 days per event, 1 event per year	10
2 to 4 (maintenance)	10 days per event, 2 events per year	20
5+ (maintenance)	1 week one time per year	5

Inyo County, in addition to maintaining the river channel portion of the water trail, would also be responsible for maintenance of the boat launch and take-out facilities. Maintenance would include tasks such as:

- trash collection and removal,
- collecting donations from iron ranger,
- servicing of vault toilets,
- maintaining signage,
- occasional repairs to the access roads and parking areas,
- as-needed repairs to livestock exclusion fencing, and
- landscape maintenance.

2.6 Required Permits and Approvals

Upon certification of the EIR by the Inyo County Board of Supervisors, the County would apply to obtain a lease from LADWP that would allow for implementation of the proposed project on Los Angeles-owned land and to provide for public access to the project area. The EIR will be used to facilitate compliance with federal and state laws, as well as by LADWP relative to the lease. In addition, the EIR will be used by various state and local agencies having jurisdiction over one or more aspects of the project, such as the Inyo County Planning Commission for the review of the Conditional Use Permit application. The approvals and permits may include, but are not limited to, the following:

- Los Angeles Department of Water and Power: Lease and special use permit for parking within powerline right-of-way
- California Department of Fish and Wildlife: Streambed Alteration Agreement 1600
- Lahontan Regional Water Quality Control Board: Waste Discharge Requirements
- State Water Resources Control Board: Clean Water Act Section 401 Water Quality Certification

- U. S. Army Corps of Engineers: Clean Water Act Section 404 Permit
- Caltrans District 9: Encroachment Permit for driveway access for water exit from SR 136 and guide signage (LADWP should be the primary encroachment permit applicant for driveway access improvements from LADWP owned parcels with the County listed as an authorized agent)
- Inyo County Planning Commission: Conditional Use Permit for the launch and take-out facilities

CHAPTER 3
Environmental Setting, Impacts, and Mitigation Measures

This chapter of the Draft Environmental Impact Report (Draft EIR) contains the analysis for the potentially significant environmental impacts of the proposed project.

Format of the Environmental Analysis

Each section includes a description of the environmental setting, regulatory framework, impacts and mitigation measures including a discussion of the significance criteria consistent with the recently revised Appendix G of the CEQA Guidelines[1], and a conclusion, as further described below. The environmental issues considered in this Draft EIR and their corresponding section numbers are as follows:

3.1	Aesthetics	3.6	Greenhouse Gas Emissions
3.2	Air Quality	3.7	Hydrology and Water Quality
3.3	Biological Resources	3.8	Land Use and Planning
3.4	Cultural Resources	3.9	Recreation
3.5	Geology and Soils	3.10	Tribal Cultural Resources

Based on the Initial Study and scoping process, it was determined that several issue areas would not be affected by implementation of the proposed project. These issue areas include Agricultural and Forestry Resources, Hazards and Hazardous Materials, Mineral Resources, Noise and Vibration, Population and Housing, Public Services, Transportation/Traffic, and Utilities and Service Systems. Chapter 5.0, *Other CEQA Considerations*, of this Draft EIR provides a summary of those issue areas for which a detailed analysis is not included and the basis for those determinations.

Environmental Impact

Each section in this chapter addresses a specific resource area as listed above and includes the following components:

[1] On December 28, 2019 the California Natural Resources Agency adopted revisions to the CEQA Guidelines.

Environmental Setting

In accordance with CEQA Guidelines Section 15125(a), the environmental setting contains a description of the regional and local physical environmental conditions in the project vicinity at the time of the publication of the NOP. This environmental setting constitutes the baseline physical condition by which a lead agency determines whether an impact is significant.

Regulatory Framework

Where the project area falls within the jurisdiction of federal, state, and local regulatory agencies, the project proponent would be subject to the laws, regulations, and policies of those agencies. These regulations are intended to guide development and/or to reduce adverse effects on sensitive resources, or offer general guidance on the protection of such resources. The regulatory framework section summarizes the applicable laws, rules, and regulations for the project. These rules may also set the standards (significance criteria or thresholds of significance) by which potential project impacts are evaluated.

Thresholds of Significance and Methodology

This section presents the significance criteria against which potential impacts are evaluated. As defined by CEQA Guidelines Section 15064.7(a), thresholds of significance are an identifiable quantitative, qualitative, or performance standard for a particular environmental effect. Significance criteria against which impact assessments are based are included for each environmental resource in accordance with Appendix G of the CEQA Guidelines.[2]

Project Impacts

This section includes a discussion of potential impacts that could result from implementation of the proposed project. This Draft EIR addresses impacts associated with the construction, operation, and maintenance of the ORWT. Based on the significance thresholds, significance determinations are assigned to each impact according to the following categories:

- **No impact:** A no impact determination could occur if the project would not result in a substantive change to the resource area that is being evaluated.

  Less than significant impact: California Public Resources Code Section 21068 defines a significant impact as "a substantial, or potentially substantial, adverse change in the environment." The environmental checklist included as Appendix G of the CEQA Guidelines provides additional guidance for determining which impacts would be regarded as significant. This Draft EIR applies the thresholds contained within Appendix G of the CEQA Guidelines and uses the CEQA definition of "significant impact." Therefore, a less than significant impact determination occurs if the project would not result in a substantial, or potentially

[2] The Initial Study, which is provided in Appendix A of this EIR, was prepared in May 2018 and is based on the Appendix G Checklist in effect at that time. On December 28, 2018 CEQA revisions were adopted by the California Natural Resources Agency that include revisions to the Appendix G Checklist. The revised Appendix G Checklist questions are used as thresholds in this EIR.

substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (see CEQA Guidelines Section 15382). Impacts determined to be less than significant do not require mitigation measures.

- **Potentially significant impact:** A potentially significant impact determination occurs if the project could result in a substantial, or potentially substantial, adverse change in the physical conditions of the resource area being evaluated. If such a determination is made, mitigation measures or alternatives must be considered if they would avoid or substantially reduce the significant impact. Feasible mitigation measures are then adopted to avoid or substantially reduce the significant impact. The level of significance with the mitigation measure is evaluated and can result in a determination that is ***less than significant with mitigation*** or ***significant and unavoidable***.

  A significant and unavoidable impact is a substantial adverse effect on the environment that cannot be mitigated to a less than significant level. A project with significant and unavoidable impacts could still proceed, but the County would be required to prepare a statement of overriding considerations, pursuant to CEQA Guidelines Section 15093, explaining why the County would proceed with the project in spite of the potential for significant environmental impacts.

Cumulative Impacts

The cumulative impacts section presents an analysis of the cumulative effects of implementation of the ORWT in combination with other past, present, and reasonably foreseeable future projects within and around the project area that could cause related environmental impacts similar to the environmental impacts anticipated to occur under the proposed project as discussed in this Draft EIR.

Mitigation Measures and Level of Significance After Mitigation

Mitigation measures are discussed and recommended for any potentially significant impacts that are identified. The final subsection of the section provides the conclusion as to the level of significance with the implementation of any recommended mitigation measures, if applicable.

References and Preparers

Sources relied upon for each environmental topic analyzed in this Draft EIR are provided in Chapter 6. References and Preparers are provided in Chapter 7.

Cumulative Impacts

As indicated above, the cumulative impacts analysis is the analysis of the cumulative effects of implementing the ORWT in combination with other past, present, and reasonably foreseeable future projects within and around the project area that could cause related environmental impacts similar to the environmental impacts anticipated to occur under the proposed project as discussed in this Draft EIR.

CEQA Guidelines Section 15130 requires that an EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" [CEQA Guidelines, Section 15355; see also Public Resources Code, Section 21083(b)]. Stated another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" [CEQA Guidelines, Section 15130(a)(1)]. The definition of cumulatively considerable is provided in Section 15065(a)(3):

> *Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

According to Section 15130(b) of the CEQA Guidelines:

> *[t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.*

For purposes of this Draft EIR, the proposed project would contribute to a cumulatively considerable and, therefore, significant cumulative impact if:

- The cumulative effects of other past, current, and probable future projects without the project are not significant and the project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- The cumulative effects of other past, current, and probable future projects without the project are already significant and the project would result in a cumulatively considerable contribution to the already significant effect. The standards used herein to determine whether the contribution is cumulatively considerable include the existing baseline environmental conditions, and whether the project would cause a substantial increase in impacts, or otherwise exceed an established threshold of significance.

Geographic Scope

The geographic area affected by the proposed project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. Generally, the geographic area associated with the environmental effects of the project as described in Chapter 3 define the boundaries of the area used for compiling the list of past, present, and reasonably foreseeable future related projects considered in the cumulative impact analysis. The air quality analysis, however, includes consideration of regional air emissions (e.g., ROG/NO_x, and PM) and, therefore, could include projects throughout the air basin the project potentially impacts.

Table 3-1 presents the geographic areas analyzed to determine if the project's contribution to a particular impact would be cumulatively considerable and, therefore, significant.

Temporal Scope

This cumulative impact analysis considers other projects that have been recently completed, are currently under construction, or are reasonably foreseeable (e.g., for which an application has been submitted). Both short-term and long-term cumulative impacts of the proposed project, in conjunction with other cumulative projects in the area, are evaluated in this chapter.

The schedule and timing of the proposed project and other cumulative projects is relevant to the consideration of cumulative impacts. The cumulative impact analysis pays particular attention to cumulative projects in the identified geographic scope with implementation schedules that could overlap with the proposed project schedule.

TABLE 3-1
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS ANALYSIS

Resource Issue	Geographic Scope
Aesthetics	Lone Pine and surrounding area
Air Quality	Great Basin Valleys Air Basin
Biological Resources	Lower Owens River watershed
Cultural Resources	Inyo County
Geology and Soils	Project area and surrounding lands
Greenhouse Gases	Globally
Hydrology and Water Quality	Lower Owens River watershed
Land Use and Planning	Inyo County
Recreation	Inyo County
Tribal Cultural Resources	Inyo County

Method of Analysis

CEQA Guidelines

CEQA Guidelines Section 15130 provides that the following approaches can be used to adequately address cumulative impacts:

- Regional Growth Projections Method — A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency; or

- List Method — A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency.

For this Draft EIR, the list method is used primarily. Consistent with CEQA, a two-step approach was used to analyze cumulative impacts. The first step was to determine whether the combined effects from the proposed project and related projects would be cumulatively significant. This was done by adding the proposed project's incremental impact to the anticipated impacts of other probable future projects and/or reasonably foreseeable development. Where the combined effect of the projects and/or projected development was determined to result in a significant cumulative effect, the second step was to evaluate whether the proposed project's incremental contribution to the combined significant cumulative impact would be cumulatively considerable, as required by CEQA Guidelines Section 15130, subdivision (a).

CEQA Guidelines Section 15064, subdivision (h)(4) states that

> *"[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."*

Therefore, it is not necessarily true that, even where cumulative impacts are significant, any level of incremental contribution must be deemed cumulatively considerable by the lead agency. If the proposed project's individual impact is less than significant, however, its contribution to a significant cumulative impact could also be deemed cumulatively considerable, depending on the nature of the impact and the existing environmental setting. If, for example, a project is located in an air basin determined to be in extreme or severe nonattainment for a particular criteria pollutant, a project's relatively small contribution of the same pollutant could be found to be cumulatively considerable. Thus, depending on the circumstances, an impact that is less than significant when considered individually may still be cumulatively considerable in light of the impact caused by all projects considered in the analysis.

List of Related Projects in the Vicinity

A summary of the cumulative projects considered is provided in **Table 3-2,** *Cumulative Projects Within the Project Area*. This is not intended to be an all-inclusive list of projects in the region, but rather a list of projects in the vicinity of the project site that may have some related environmental impacts to the proposed project and are: (1) recently completed; (2) currently under construction or implementation or beginning construction or implementation; (3) proposed and under environmental review; or (4) reasonably foreseeable.

In compiling the cumulative projects lists, the following agencies were contacted for input on projects planned, undergoing environmental review, approved and entitled, or in construction within their respective jurisdictions: Inyo County Planning Department and Water Department, LADWP, and the Paiute-Shoshone Tribe. As well, additional cumulative projects were identified from the County's Environmental Filings website, which includes all projects undergoing environmental review within the County, as well as from the Caltrans District 9 and Southern California Edison's websites. In addition, while not formally adopted, the LORP Recreation Use Plan could foreseeably be implemented, which would include multi-use trails, birding trails, a heritage trail, and other paddling trails along the Lower Owens River.

TABLE 3-2
CUMULATIVE PROJECTS WITHIN THE PROJECT AREA

Reference Number	Project Name	Lead Agency	Project Location	Project Type	Project Description	Status
1	Conditional Use Permit (CUP 2017-03)/ F.W. Aggregate-Durability Quarry and Reclamation Plan (RP 2017-01)	Inyo County	Adjacent and north-east of State Route 136, 2 miles north of Keeler, 8 miles east of U.S. Highway 395, 11 miles south-east of Lone Pine	Quarry	Expansion of an existing quarry from 65 acres to 249 acres with processing facilities	Entitled
2	The Routine Maintenance Streambed Alternation Agreement for Inyo County Public Works	Inyo County	Inyo County	Routine Maintenance Agreement	10-year Routine Maintenance Agreement with CDFG under the Lake and Streambed Alteration Program, which will cover routine maintenance performed by Inyo County Road Department that occurs near CDFG jurisdictional waterways	Under Environmental Review
3	Owens Lake Piezometers	Los Angeles Department of Water and Power	Owens Lake, 5 miles south of Lone Pine	Groundwater Monitoring	Installation of 3 piezometers at Owens Lake to monitor upward groundwater gradients at each site	Entitled
4	State Water Project (SWP) Supply Contracts Amendments for Water Management and California WaterFix	Department of Water Resources	SWP Service Area	State Water Project	Amending certain provisions of the State Water Resources Development System Water Supply Contracts	Under Environmental Review
5	Brockman Landfill Remediation Project	Los Angeles Department of Water and Power	Northeast of Bishop, CA	Remediation	Remediation of Brockman Lane Disposal Site; waste reconsolidation, landfill cover, final grading, and reseeding	Entitled

Reference Number	Project Name	Lead Agency	Project Location	Project Type	Project Description	Status
6	North Haiwee Dam No.2	Los Angeles Department of Water and Power and Bureau of Land Management	Owens Valley, unincorporated Inyo County	Dam Infrastructure	Improve seismic reliability of the North Haiwee Reservoir; construction of new dam	Entitled
7	Lone Pine Airport Pavement Rehab Design Project	Inyo County	Lone Pine Airport, Lone Pine, CA	Airport Runway Maintenance	Rehabilitation of 4,000 ft. by 60 ft. runway along with four entrance/exit taxiways	Entitled
8	Lone Pine VFW Parking Lot Project	Inyo County	481 Gene Autry Lane, Lone Pine, CA	Parking Lot	Removal of existing asphalt; construction of approximately 20,000 sf parking lot and roadway	Entitled
9	Owens Lake Master Project	Los Angeles Department of Water and Power	Owens Lake, Inyo County, CA	Dust Control Program	Modifications to the Owens Lake Dust Mitigation Program to the change the design and operation of existing dust control measures.	Under Environmental Review
10	Olancha Cartago 4-lane Project	California Department of Transportation – District 9 and Federal Highway Administration	Highway 395, south of Lone Pine, CA	Roadway Expansion	Conversion of existing two-lane highway to four-lane expressway from post mile 29.2 to post mile 41.8	In permitting process
11	Ivanpah-Control Project	Southern California Edison	Highway 395, Lone Pine, CA	115 kV Transmission Lines	Install 126-miles of line parallel to Highway 395 with the potential for new poles and conductors	Initiated Pre-Filing Process

Source: Inyo County, Caltrans, Los Angeles Department of Water and Power, SCE; 2018.

3.1 Aesthetics

This section provides an assessment of potential impacts related to aesthetics associated with implementation of the project. This section provides a description of existing aesthetic conditions, a summary of applicable regulations related to aesthetic features and conditions, and an evaluation of the potential impacts that may result from implementing the proposed project. Specifically, potential project impacts addressed in this section include substantial adverse effects on scenic vistas, damage to scenic resources within a state scenic highway, and degradation of existing visual character.

3.1.1 Environmental Setting

Regional and Local Setting

The proposed project is located along an approximately 6.3-mile segment of the Lower Owens River immediately east of the unincorporated town of Lone Pine and the Lone Pine Paiute Shoshone Indian Reservation in Inyo County (County), California. The project is located in the Owens Valley, which is nestled between the Sierra Nevada mountain range on the west and the Inyo and West mountain ranges on the east (USGS, 2017). Due to the large amount of federal, state, and local agencies' landownership, the County has remained a primarily rural landscape with expansive amounts of open space sprinkled with various small towns, including Lone Pine. Approximately 65 percent of the County is designated as wilderness, where existing uses include undeveloped open space with scenic views of the surrounding mountain ranges to residential, commercial, industrial, and public institutional uses in the towns.

Lone Pine and the Lone Pine Paiute Shoshone Indian Reservation are located approximately one-mile and 0.7-miles west of the project area, respectively. Lone Pine and the Lone Pine Paiute Shoshone Indian Reservation are at an elevation of 3,732 feet above mean sea level and include relatively low-lying structures typically ranging from one to three stories. The Lower Owens River is at an elevation of 3,630 feet above mean sea level, which is approximately 102 feet lower than Lone Pine and the Lone Pine Paiute Shoshone Indian Reservation, and sits within an incised floodplain with surrounding bluffs. Due to the depressed floodplain, the river channel itself is not visible from Lone Pine or the Lone Pine Paiute Shoshone Indian Reservation.

Figures 3.1-1a and **3.1-1b**, *Existing Viewsheds,* show the surrounding scenic views looking north, south, east, and west from the dirt road on the bluff just to the south of the intersection of Lone Pine Gauge Road and the Owens River. As shown in the figures, along the Lower Owens River, the project area is surrounded by open space, which is used by managed cattle grazing operations from January 1 to March 30.[1] Due to the low-lying profile of surrounding development, scenic views of the Sierra Nevada Mountain Range and the Alabama Hills are visible from the project area. Furthermore, wide, expansive views of open space to the north and south, and the 10,000-foot crest of the Inyo Mountains to the east are visible from the river channel. In addition to views of the surrounding mountain ranges and open space, other small-scale permanent structures located around the river channel include signage associated with the Lower Owens River Project (LORP), overhead power lines, cattle fences, and bridge walkways.

[1] LORP Monitoring, Adaptive Management and Reporting Plan; Appendices A-52; Lone Pine Lease Grazing Management Plan (RLI-456)

Existing Viewshed – North

Existing Viewshed – South

D170794.00

SOURCE: ESA, 2018

Owens River Water Trail

Figure 3.1-1a
Existing Viewshed – North and South

ESA

Existing Viewshed – East

Existing Viewshed – West

D170794.00

SOURCE: ESA, 2018

Owens River Water Trail

Figure 3.1-1b
Existing Viewshed – East and West

ESA

Scenic Highways and Routes

The County has designated view corridors within the region, which are roadway segments that provide travelers a scenic vista or public views of expansive open space areas.[2] According to the California Scenic Highway Mapping System, there are two highway segments which are officially designated state scenic highways and four highway segments which are eligible for designation as state scenic highways in the Owens Valley, as shown in **Figure 3.1-2**, *Inyo County Scenic Highways.*[3] The nearest designated scenic highway to the project area is the segment of Highway 395 beginning in Independence and extending north approximately 20 miles, which is approximately 17 miles north of the project area.

Near the project area, there are no officially designated scenic highways but the segment of Highway 395 that extends from Owens Lake north to Independence is eligible for designation as a scenic highway.[4] Highway 395 roughly runs parallel to the Owens River through the unincorporated town of Lone Pine and the Lone Pine Paiute Shoshone Indian Reservation, approximately one-mile and 0.7-mile, respectively, west of the project area. However, the Lower Owens River is not visible from this roadway due to the river being located at a lower elevation within an incised floodplain with surrounding bluffs, where drivers' sightlines of the river would be blocked by the surrounding upland. In addition to a lesser extent, existing development within Lone Pine and existing vegetation would also aid in blocking views of the river channel from drivers passing by.

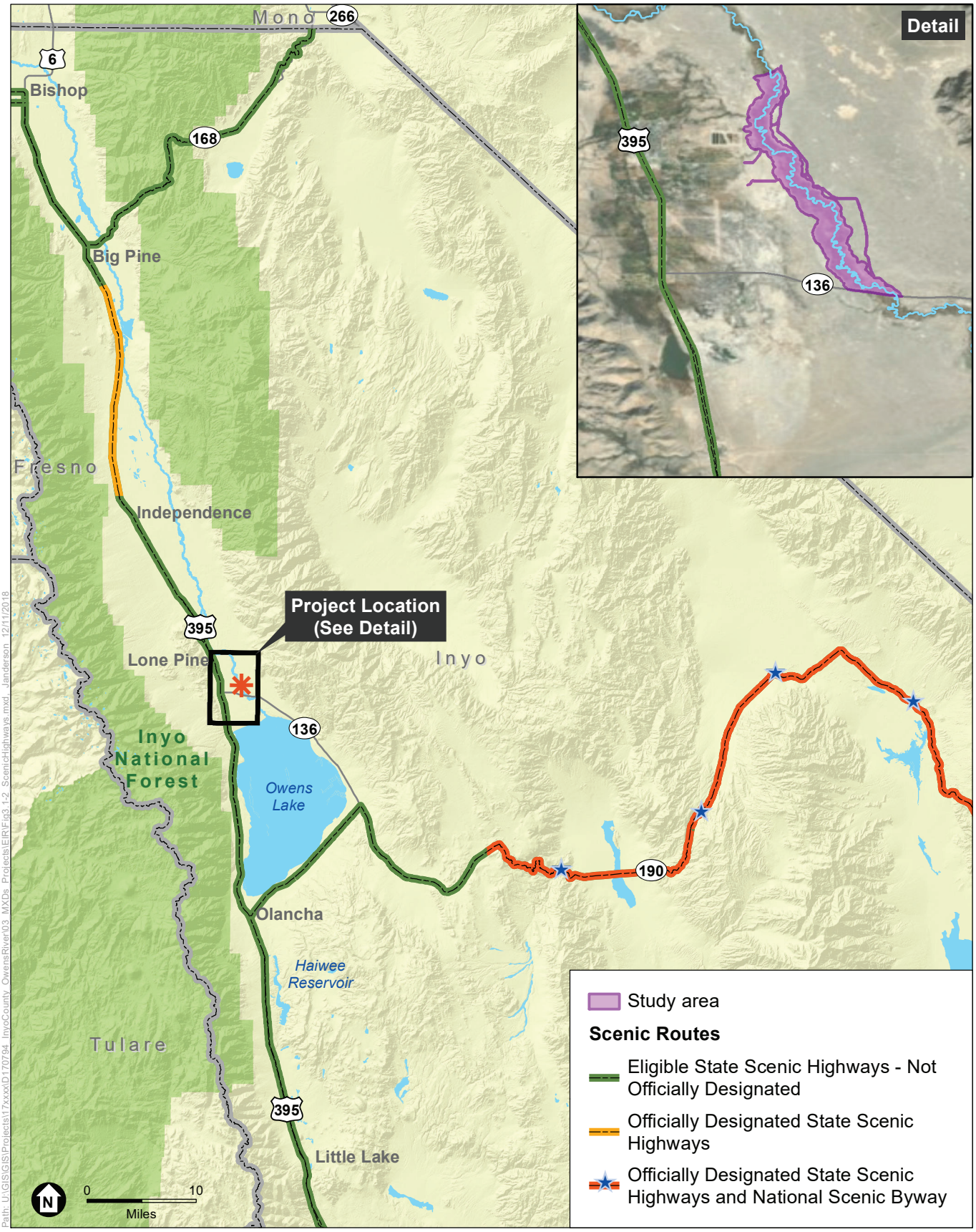
Light and Glare

Due to the rural, undeveloped, nature of the project area, there are currently no light or glare sources along the Owens River. The nearest sources of light and glare are generated in the town of Lone Pine, where lighting sources are typical of rural development, such as street and security lighting, car headlights, and residential lights. Sources of glare include reflective materials, such as metal and glass. While the nearest development is located approximately 0.7 miles to the west of the project area, due to relatively low level of development in the town and the depressed floodplain the amount of spillover light pollution and glare is minimal in the project area.

2 Inyo County General Plan Conservation/Open Space Element, Inyo County, 2001. Available: http://inyoplanning.org/general_plan/goals.htm. Accessed December 2, 2018.

3 California Scenic Highway Mapping System – Inyo County, California Department of Transportation, 2018. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 19, 2018.

4 California Scenic Highway Mapping System – Inyo County, California Department of Transportation, 2018. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 19, 2018.



SOURCE: ESRI

Owens River Water Trail

Figure 3.1-2
Inyo County Scenic Highways

ESA

3.1.2 Regulatory Framework

Federal

National Forest Scenic Byway Program

The National Forest Scenic Byway system was created in 1987 and is administered by the United States Forest Service (USFS). The system consists of 138 National Forest Byways, each administrated by the United States Department of Agriculture's Forest Service Chief. The goal of the National Forest Scenic Byway system is to enhance rural community tourism by providing access to scenic and historic viewpoints. The National Forest Scenic Byway system is a federal program, but is administered and maintained by the State, County, and town. These byways are designated jointly with Federal Highway Administration, Forest Service, and State Departments of Transportation (which is the California Department of Transportation (Caltrans) in California). The only designated scenic byway in the vicinity of the project area is Whitney Portal Road, which is approximately four miles west of the project site.

State

California Scenic Highway Program

California's Scenic Highway Program is administered by Caltrans to preserve and protect scenic highway corridors from changes that would diminish views of the natural landscape. The State Scenic Highway program was developed in 1963 to "protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment." Caltrans designates State Scenic Highways throughout California. The designation of a scenic highway depends on a variety of factors, including "how much of the landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view." The designation provides benefits to scenic resources along the highway, some of which include protection from incompatible uses, mitigation of activities within the corridor that detract from the highway's scenic quality, and preservation of hillsides. Directly west of Highway 395 in Lone Pine near the project area, the Alabama Hills in front of the Sierra Nevada mountains have been preserved in their natural state, which enhances the visual landscape of surrounding this segment of Highway 395, where this highway segment is eligible for scenic designation.

Local

Inyo County General Plan

The Inyo County General Plan was adopted by the Inyo County Board of Supervisors on December 11, 2001, and provides the County with a consistent framework for land use decision making and future development. The Conservation and Open Space Element of the General Plan provides goals and policies to protect the visual resources within the County, including highways which provide beautiful overviews of the natural landscapes. The County is currently in the process of updating the General Plan. The Draft General Plan Update was released in 2013 and would not result in any changes to the Conservation/Open Space Element and Circulation Element goals and policies that are applicable to the project.

The Conservation and Open Space Element defines the following terms in describing visual resources:

> *View Corridor*: A view corridor is a highway, road, trail, or other linear feature that offers travelers a vista of scenic areas within the County.
>
> *Viewshed:* A viewshed is the area that can be seen from a given vantage point and viewing direction. A viewshed is composed of foreground items (items closer to the viewer) that are seen in detail and background items (items at some distance from the viewer) that frame the view.

In addition, the Conservation and Open Space and Circulation Elements of the County's General Plan include the following goals and policies related to visual resources within the County that are applicable to the project:

Conservation and Open Space Element

> ***Goal VIS-1*** Preserve and protect resources throughout the County that contribute to a unique visual experience for visitors and quality of life for County residents.
>
> > *Policy VIS-1.3 Grading Impacts.* Man-made slopes should be treated to reflect natural hillside conditions in the surrounding area.

Circulation Element

> ***Goal SH-1*** Maintain a system of scenic routes that will preserve and enhance the quality of life for present and future generations.
>
> > *Policy SH-1.1 Protect the Qualities of Designated Scenic Routes.* The visual qualities of designated scenic routes should be protected.

While there are no designated scenic highways in the vicinity of the project, the segment of Highway 395, which runs through Lone Pine, is eligible for designation as a scenic highway. Therefore, for the purposes of this analysis, Policy SH-1.1 is considered to be applicable to the project.

Inyo County Code

The County's Code includes the Zoning Code, which contains development standards and provisions for development within the County, including standards and regulations for signage within the County (Chapter 18.75 of the Code). Section 18.75.110 of the County Code determines the height of signs, where all signs within open space areas cannot exceed 25 feet, except for billboards with a conditional use permit in limited zoning designations. Section 18.75.130 of the County Code outlines the design guidelines which the Planning Director uses to approve new signs, which the following requirements are applicable to the project:

- Prior to the issuance of a building permit for any sign subject to the review of the planning director, building plans, including accurate elevations of the proposed sign and sufficient detailing of exterior materials, shall be submitted by the building inspector to the planning

director to enable the director to determine whether the proposed sign is consistent with the requirements of Chapter 18.75 of the County Code;

- No sign shall be permitted to be sited on any property in a manner which would unnecessarily destroy or substantially damage the natural beauty of the area, particularly insofar as it would adversely affect values incident to ownership of land in that area; or which would unreasonably affect adversely the beauty and general enjoyment of existing residences on adjoining properties; and

- No illuminated sign shall be permitted which would result in light or glare to roads and properties in the vicinity that would result in a significant adverse effect on public safety or a nuisance to surrounding residences.

3.1.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to aesthetics in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant aesthetics impact would occur if the project would:

AES-1: Have a substantial adverse effect on a scenic vista.

AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or

AES-4: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

As detailed in the Initial Study (refer to Appendix A of this EIR), the proposed project would result in less than significant impacts regarding **AES-4**. For a brief discussion on why this issue area was not further evaluated in this section, refer to Chapter 5, Other CEQA Considerations, of this EIR.

Methodology

The significance determination is based on several evaluation criteria, including (i) the extent of project visibility from sensitive viewing areas such as designated scenic routes, public open space, or residential areas, (ii) the degree to which the various project elements would contrast with or be integrated into the existing landscape, (iii) the extent of change in the landscape's composition and character and (iv) the number and sensitivity of viewers.

The impact analysis considers view obstruction, negative aesthetic effects in designated scenic highway view corridors, and degradation of the visual quality and character of the project area based on field observations, aerial and ground-level photos of the surrounding area.

3.1.4 Project Impacts

Scenic Vistas and Visual Character Impacts

Threshold AES-1: The project would result in a significant impact if the project would have a substantial adverse effect on a scenic vista.

Threshold AES-3: The project would result in a significant impact if in non-urbanized areas, the project would substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, the project would result in a significant impact if the project would conflict with applicable zoning and other regulations governing scenic quality.

Impact Statement AES-1: *Construction of the ORWT would temporarily alter the existing conditions in the project area. However, the new permanent facilities developed under the project would not obstruct scenic vistas of the surrounding landscape or degrade the visual quality or character of the project area. Operation and maintenance of the ORWT would ensure that the project area maintains its high visual quality and allow users to experience the surrounding scenic views. Therefore, impacts would be less than significant.*

Construction

As discussed in Chapter 2, *Project Description,* the ORWT is comprised of two components, which include the water trail itself and the boat launch and take-out facilities. Construction of the water trail would involve three types of activities: 1) clearing of emergent vegetation to a width of approximately 15 feet; 2) relocation of large woody debris (LWD); and 3) removal of sediments from the dominate channel to establish a single continuous navigable waterway. Clearing of emergent vegetation in the river channel would occur via one or a combination of hand labor and construction equipment. Hand labor includes the use of hand tools consisting of saws, sickles, rakes, and winches for removal of tules while construction equipment would include boat-based or amphibious equipment to clear vegetation. At occlusions where emergent vegetation is growing across the channel, excavation to a width of 15 feet and an average depth of 1 foot would occur to remove root masses. Spoils from construction would be collected and spread on the adjacent floodplains as shown on Figure 2-3, Proposed Project Overview (please refer to Appendix B-3 of this EIR for more detailed figures).

In addition, project construction would include development of the boat launch and take-out facilities. The boat launch and take-out facilities would consist of an all-weather surfaced staging area along with a pad mounted, prefabricated vault toilet, wildlife resistant trash receptacles, a tube-type fee station, and weather resistant signage in addition to the actual launch and take-out facilities. The launch and take-out facilities would be designed to accommodate all recreational users, including users with disabilities. The launch and take-out facilities would consist of an access route as well as approach and dock or ramp components, which would include the following features:

- Firm and stable surface directly connected to the water;
- Gradual slopes in accordance with the United States Access Board Standards for Trails, and for Outdoor Recreation Access Routes;
- Access routes cross slopes of 2 percent or less;
- Open area sufficient to turn around an 8-person van with an 8-place kayak trailer;
- Textured surfaces to provide extra traction for wet conditions;
- Surface gaps maximum of 0.5 inches to avoid catching wheels and casters of wheelchairs;
- Grab bars for transfer between wheel chair and boat and boat to water;
- Transfer steps or boards which support a user and allow them to slide into their boat.

Construction equipment expected to be used for the ORWT would include, but is not limited to, standard excavators with low ground pressure appurtenances, amphibious excavator, wheeled or rubber tracked dump trucks, tracked or wheeled skid steer loaders, bulldozers, skip loaders, tracked or wheeled skid steer loader, excavators, and roller compactor (please refer to Figures 2-6a and 2-6b for examples of the types of equipment). Construction equipment and workers would access the river channel and floodplain via temporary access routes as shown in Figure 2-3. Construction of the project would introduce various types of construction equipment into the Lower Owens River channel and floodplain, which could create a visual impact due to the difference in size and color of such equipment compared to the existing open space character of the project area.

Construction activities would be temporary and are expected to occur over a seven-month period. The majority of the river channel within the project area is not visible from surrounding roadways or Lone Pine. Public views of the river require the observer to be in proximity to the river channel. The exception would be the boat launch facility which would be visible from the adjacent portions of Lone Pine Narrow Gauge Road, and the boat take-out facility which could be partially visible from SR 136. While motorists on these roadways would be able to view the construction of the boat launch and take-out facilities, views would last for a brief period of time and would be temporary as construction activities occur at the boat launch and take-out locations. Once construction is completed at these facilities, construction equipment would be removed and all disturbed areas outside the facilities' footprints would be restored to its existing condition and seeded with upland species native to the area.

In addition, due to the existing development and vegetation, and the lower elevation of the river channel and floodplain relative to the surrounding area, tall construction equipment associated with the in-channel work would be partially or fully screened from public long-range views and would not affect the quality of existing scenic vistas from Highway 395. Since construction activities would occur within the depressed floodplain and would move along the river channel as construction of the water trail progresses, visual impacts to scenic vistas would be minimized during construction of the water trail.

Construction activities associated with the creation of the water trail would also result in spoils, which would be collected and spread within designated spoils placement areas along the floodplain. Spoils would be transported to spoils placement areas using existing informal dirt ranch roads along the river. The majority of the spoils areas (see Figure 2-3) would be located within proximity to the river segments from which occlusions would be removed. Assuming use of all of the spoils areas and placement of vegetation and material from channel excavation at the closest spoils areas, the depth of material could range from 0.6 to 3.65 feet in depth, with an average depth of approximately 1.6 feet.[5] Spoils would be either wind-rowed (i.e., placed as low berms) or "contoured" (i.e., placed and smoothed in such a manner as to blend in with adjacent terrain, while not blocking local flow paths) in the spoils placement areas and stabilized by passive revegetation with salt grass (*Distichilis spicata* or similar) or native bunchgrasses. It is anticipated that spoils would breakdown (e.g., through natural decomposition, trampling, bedding, and grazing by cattle, natural recruitment of saltgrass and other plants on top of and through the spoils). Therefore, impacts from the spoils areas are expected to passively recover and reestablish naturally to pre-project conditions, resulting in temporary visual impacts.

While the spoils would be relatively low-laying and would not be easily seen from surrounding public views, existing vegetation would further block views of the spoil placement areas. In addition, views of construction equipment transporting the spoils from the river channel to the floodplain may be visible from public views; however, the occurrence of construction equipment in the floodplain would be sporadic throughout the day and would cease once construction is complete. Access roads and staging areas during construction would be temporary and would be reverted to pre-construction conditions once construction is complete.

Once construction of the ORWT is complete, where construction equipment has been removed from the project area and the disturbed construction areas have been restored to pre-construction conditions, the project area's visual character and scenic views would be similar to existing open space conditions. For these reasons, construction of the ORWT would result in less than significant impacts to scenic vistas and visual quality and character.

Operation and Maintenance

Once construction of the ORWT is complete, the permanent structures that would remain are the boat launch and take-out facilities and signs installed along the water trail. The boat launch and take-out facilities would be located on a relatively small footprint with a low profile to blend in with the surrounding open space areas. While the boat launch facility which would be visible from the adjacent portions of Lone Pine Narrow Gauge Road, and the boat take-out facility which could be partially visible from SR 136, these facilities would not detract from the surrounding scenic vistas as they would only be visible from limited areas and for a short duration for people traveling on the roadways. Furthermore, these facilities would be consistent with the existing permanent structures located in the floodplain (i.e., signage, overhead power lines, cattle fences, and bridge walkways), where the introduction of the boat launch and take-out facilities in the existing viewshed would not substantially change the visual character or quality of the project

[5] The actual depth of piles may vary slightly in the field; methods for distributing spoils would be based on actual materials excavated and the objective to spread materials as thinly as possible to encourage deflation and the recolonization of spoils areas by native vegetation.

area. Signage would be installed along the river channel to provide educational information to users of the ORWT about topics such as the region's ranching history, history and information on the local Native American tribes, and surrounding scenic views. In addition, reflective mileage markers would be installed as a safety precaution, allowing a known location if rescue were to be required as well as a sign located above the river just before the takeout to alert paddlers of the location of the takeout (i.e., which side of the river and the number of miles remaining). The signage would be relatively low in height and positioned for users of the water trail to read. Existing vegetation along the floodplain would screen signs from public views looking towards the river. In addition, all signage would be required to comply with the signage standards established in the Inyo County Code, which include standards related to height, type of sign, and area. Compliance with the Inyo County Code would ensure that signage is designed in the aesthetic that the County desires and is installed according to County regulations. Furthermore, signage installed with development of the project would be consistent with existing signage already present within the river channel. Since the County allows for signage to be installed in open space areas, the presence of new signage would not create a visual conflict with the surrounding open space.

The project would create an accessible recreational resource which provides users the opportunity to be immersed in the natural setting of the Lower Owens River. Views from the river would be of the surrounding Sierra Nevada and Inyo mountain ranges. The ORWT would likely attract more people to the river than under existing conditions, which in turn could generate trash or vandalism of the boat launch and take-out, which would detract from the visual quality of the facilities. Moreover, operation of the ORWT would result in cars and trailers that would use the boat launch and take-out facilities, that would introduce new visual features around the river channel. However, the amount of cars and trailers would be limited to the number of parking spaces in designated parking areas. Furthermore, the cars and trailers in the parking areas would be relatively low in height and would not obstruct existing viewsheds.

The County would be responsible for maintenance activities of the boat launch and take-out facilities, which would include trash collection and removal, servicing of vault toilets, occasional repairs to the gravel access roads and parking areas, as-needed repairs to livestock exclusion fencing, and vegetation maintenance. Maintenance of these facilities would ensure that the facilities are clean and clear of debris, are in good repair, free of vandalism, and are visually pleasing to the public as well as consistent with the surrounding open space character. Maintenance within the boat launch and take-out facilities areas would be ongoing and would include typical service trucks used to remove trash, collect fees, service the vault toilets, and conduct any necessary repairs. While operation and maintenance of the project would generate additional service truck trips in the area, which would slightly increase the presence of larger vehicles around the project area, the amount of service trucks required would be relatively minimal. Thus, the presence of the service trucks would not degrade the visual quality of the project area or obstruct views of the scenic landscape.

Annual maintenance of the water trail would occur to maintain the integrity of the water trail and would involve the use of construction equipment similar to the equipment used during the construction phase. As stated in Chapter 2, *Project Description,* a maximum of 20 days of maintenance per year is anticipated in the first two years of the operation of the project, which would further decrease to approximately 5 days a year for the next 18 years. While maintenance equipment could be visible in the river channel, maintenance activities would be short-term and temporary, and the river would return to operational conditions once complete.

A visual benefit of the project would be the removal of the existing tules, which currently block the visibility of open water over a large portion of the approximately 6.3-mile stretch of river. Project efforts would widen the open-water channel portion of the river within the project area, resulting in increased water flow, and a clearer view of the river itself, all of which would improve the visual quality of the project area. While maintenance of the channel would require clearing activities, the project would maintain the existing alignment of the river channel as much as possible and would remove the minimum amount of vegetation required to allow for the passage of non-motorized watercrafts and small maintenance craft.

Overall, operation and maintenance of the project would not affect an existing scenic vista or degrade the existing visual quality or character of the project area. Impacts would be less than significant.

State Scenic Highways

Threshold AES-2: The project would result in a significant impact if the project substantially damaged scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Impact Statement AES-2: *Implementation of the project would not include the removal of trees or rock outcroppings and would not damage any historical structures. In addition, implementation of the project would not substantially change existing views of the project area and thus would not affect the eligibility of the segment of Highway 395 that runs through Lone Pine to be designated a scenic highway. Therefore, development of the project would not damage scenic resources within an officially designated or eligible scenic highway. Impacts would be less than significant.*

The nearest highways to the project area include Highway 395 and SR 136. There are no officially designated scenic highways in the project area. However, the segment of Highway 395 that extends from Owens Lake north to Independence, which runs through Lone Pine, is eligible for designation as a scenic highway.[6] Implementation of the project would not include the removal of trees or rock outcroppings and would not damage any historical structures that are located in the river or surrounding floodplain. However, if development of the project resulted in significant changes to the scenic resources along this segment of Highway 395, which contributed to the loss of its scenic highway eligibility, then project impacts could be considered significant.

6 California Scenic Highway Mapping System – Inyo County, California Department of Transportation, 2018. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 19, 2018.

Highway 395 runs approximately 1.4 miles west of the Owens River through Lone Pine. The Owens River is not visible from this segment of Highway 395 due to multiple factors, which include the lower elevation of the river channel relative to the surrounding area, view obstruction due to existing development and vegetation, and the distance from the roadway to the river. While construction of the water trail would involve equipment of various sizes moving along the river channel, the introduction of such equipment would be temporary in nature and would occur either in the river or in the surrounding floodplain, where equipment would be partially screened due to the lower elevation and the surrounding obstructing topography, vegetation, and development. Once construction is complete, the water trail would function as a natural flowing river with no tall permanent structures. Similar to construction of the water trail, all maintenance activities would occur within the river channel or surrounding floodplain and would occur on an annual basis in order to maintain the integrity of the river channel. Maintenance activities for the water trail would involve the use of construction equipment similar to the equipment used during the construction phase. While maintenance equipment could be visible in the river channel, maintenance activities would be temporary in nature, and the river would return to operational conditions once completed. Therefore, construction and operation of the water trail would not result in permanent adverse changes to the scenic resources of the project area. Therefore, the project would not affect Highway 395 eligibility to be designated as a scenic highway.

In addition, the boat launch and take-out facilities are located approximately two miles directly east of Highway 395 along Lone Pine Narrow Gauge Road and SR 136, respectively, where views of these facilities would also not be visible to drivers traveling along Highway 395 due to similar reasons as mentioned above. Similar to the water trail, construction and maintenance of the boat launch and take-out facilities would occur within the river channel and surrounding floodplain, where existing topography, vegetation, and development would screen activities from travelers using Highway 395. Furthermore, even though these facilities would be permanent structures once constructed, their presence in the river channel would result in a relatively minor change to scenic viewsheds of the project area or surrounding scenic resources due to the lower elevation relative to the surrounding area, which would screen these facilities from near- and long-range views. Maintenance of the boat launch and take-out facilities would include typical maintenance activities, such as trash collection and removal, servicing of vault toilets, occasional repair of the gravel access roads and parking areas and livestock exclusion fencing, and vegetation maintenance, which would occur on an as-needed basis. Typical maintenance trucks and equipment would be used to service the boat launch and take-out facilities, which would not create permanent visual impacts. Therefore, construction and operation of the boat launch and take-out facilities would not result in permanent adverse changes to the scenic resources of the project area. Therefore, the project would not affect Highway 395 eligibility to be designated as a scenic highway.

In summary, implementation of the project would not affect the eligibility of Highway 395 to be formally designated as a scenic highway in the future. In addition, as explained under Threshold AES-1, the proposed project would not damage scenic vistas. Therefore, impacts related to damaging scenic resources within a state scenic highway would be less than significant.

3.1.5 Cumulative Impacts

The geographic context for the analysis of cumulative impacts to aesthetics includes existing viewsheds that provide near- and long-range views of the project area. As listed in Table 3-2, there are 11 related projects in the vicinity of the project area. A significant cumulative impact would occur if the project would significantly contribute to a reduction in the quality of scenic vistas, scenic resources within a designated state scenic highway, or overall visual character of the area. As shown in Table 3-2, related projects in the vicinity consist of a variety of projects, ranging from quarries, roadway and runway expansion and repairs, new utility transmission lines, dust control programs, remediation, and water-based projects that address waterway maintenance activities.

As shown in the analysis above, implementation of the project would result is less than significant impacts to scenic vistas, scenic resources, and visual character and from a larger perspective would even be beneficial to the Lower Owens River area. Similar to the project, the majority of the cumulative projects are either underground or implemented within existing roadways or waterways, where they would have a low-laying profile, which would not create in new substantial permanent structures in the existing viewsheds of the project area. In addition, three of the cumulative projects are located in Lone Pine and as such are in the same viewshed as the project, where development of these projects in combination with the project could create substantially changes to existing near- and long-range views of the project area. However, these projects consist of two repaving projects and the installation of an underground utility line, where the combination of these development projects with the project have no potential to substantially alter near- or long-range views of the area. Furthermore, all of the other development projects would be required to comply with the design guidelines and signage standards of the Inyo County Code, which would ensure that development is consistent with the County's design preferences. Therefore, the proposed project, in conjunction with other cumulative projects, would not result in cumulative impacts related to aesthetics.

3.1.6 Mitigation Measures

Implementation of the project would not degrade the quality of scenic vistas, scenic resources within a designated state scenic highway, or the overall visual character of the project area. Therefore, no mitigation measures are required.

3.1.7 Level of Significance After Mitigation

Implementation of the project would not degrade the quality of scenic vistas, scenic resources within a designated state scenic highway, or the overall visual character of the project area. Therefore, impacts related to aesthetics would be less than significant, and no mitigation measures are required.

3.2 Air Quality

This section addresses air emissions generated by construction and operation of the project. The analysis also addresses consistency of the project with air quality policies set forth within the Great Basin Air Pollution Control District's (GBAPCD) air quality plans. The analysis of project-generated air emissions focuses on whether the project would cause an exceedance of an ambient air quality standard or a significance threshold, or otherwise result in a health impact. Worksheets supporting the air quality analysis are provided in Appendix D of this Draft EIR.

3.2.1 Environmental Setting

Background

The project site is located within the Great Basin Valleys Air Basin (Air Basin), which is an approximately 13,975-square-mile area encompassing all of Alpine, Mono, and Inyo Counties. The terrain and geographical location determine the distinctive climate of the Air Basin, as it is a basin with surrounding mountains that trap the air and its pollutants within the basin.

The climate of the Air Basin is influenced by the Sierra Nevada mountains. The climate is generally semiarid to arid with low precipitation, abundant sunshine, frequent winds, moderate to low humidity, and a high potential for evapotranspiration. The extent and severity of pollutant concentrations in the Air Basin is a function of the area's natural physical characteristics (weather and topography) and man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Air Basin, making it an area of high pollution potential. The Air Basin's meteorological conditions, in combination with regional topography, are conducive to the formation and retention of ozone, which is a secondary pollutant that forms through photochemical reactions in the atmosphere. The greatest air pollution impacts throughout the Air Basin typically occur from June through September. Pollutant concentrations in the Air Basin vary with location, season, and time of day.

Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants that are a threat to public health and welfare. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria (see Section 3.3.2, Regulatory Setting, below). The following criteria pollutants are a potential concern in the project area.

Ozone

Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_X) in the presence of sunlight under favorable meteorological conditions, such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. According to the USEPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath (USEPA, 2018). Ozone can

make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease (USEPA, 2018). Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children (USEPA 2018). According to CARB, inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath (CARB, No Date[a]). The USEPA states that people most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers (USEPA, 2018). Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure (USEPA, 2018). According to CARB, studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults (CARB, No Date[a]). Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures (CARB, No Date[a]). Further research may be able to better distinguish between health effects in children and adults (CARB, No Date[a]).

Volatile Organic Compounds (VOCs): VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State as toxic air contaminants (TACs). These are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons, as are architectural coatings. Emissions of VOCs themselves are not "criteria" pollutants; however, they contribute with nitrogen oxides (NO_X) to formation of O_3 and are regulated as O_3 precursor emissions.

Nitrogen Dioxide

NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include NO_2 and nitric oxide (NO). Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas (CARB, No. Date [b]). The principle form of NO_X produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X (CARB, No. Date [b]).

Major sources of NO_X include emissions from cars, trucks and buses, power plants, and off-road equipment (USEPA, 2016a). The terms NO_X and NO_2 are sometimes used interchangeably. However, the term NO_X is typically used when discussing emissions, usually from combustion-related activities, and the term NO_2 is typically used when discussing ambient air quality standards. Where NO_X emissions are discussed in the context of the thresholds of significance or

impact analyses, the discussions are based on the conservative assumption that all NO_X emissions would oxidize in the atmosphere to form NO_2.

According to the USEPA, short-term exposures to NO_2 can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms while longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections (USEPA, 2016a). According to CARB, controlled human exposure studies show that NO_2 exposure can intensify responses to allergens in allergic asthmatics (CARB, No. Date [b]). In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses (CARB, No. Date [b]). Infants and children are particularly at risk from exposure to NO_2 because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration while in adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB, No. Date [b]). CARB states that much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO_2 and there is only limited information for NO and NO_X, as well as large uncertainty in relating health effects to NO or NO_X exposure (CARB, No. Date [b]).

Carbon Monoxide

Carbon monoxide (CO) is primarily emitted from combustion processes and motor vehicles due to the incomplete combustion of fuel, such as natural gas, gasoline, or wood, with the majority of outdoor CO emissions from mobile sources (CARB, No Date [c]). According to the USEPA, breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain and at very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness and death (USEPA, 2016b). Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease since these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress (USEPA, 2016b). In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (USEPA, 2016b). According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain (CARB, No Date [c]). For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress; inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance (CARB, No Date [c]). Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB, No Date [c]).

Sulfur Dioxide

According to the USEPA, the largest source of sulfur dioxide (SO_2) emissions in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities while smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content (USEPA, 2018b). In 2006, California phased-in the ultra-low-sulfur diesel regulation limiting vehicle diesel fuel to a sulfur content not exceeding 15 parts per million, down from the previous requirement of 500 parts per million, substantially reducing emissions of sulfur from diesel combustion (CARB, 2004).

According to the USEPA, short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult (USEPA, 2018b). According to CARB, health effects at levels near the State one-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical activity and exposure at elevated levels of SO_2 (above 1 ppm) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality (CARB, No Date [d]). Children, the elderly, and those with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO_2 (CARB, No Date [d]) (USEPA, 2018b).

Particulate Matter

Particulate matter air pollution is a mixture of solid particles and liquid droplets found in the air (USEPA, 2017a). Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye while other particles are so small they can only be detected using an electron microscope (USEPA, 2017a). Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers and smaller (PM10); and fine inhalable particles with diameters that are generally 2.5 micrometers and smaller (PM2.5) (USEPA, 2017a). Thus, PM2.5 comprises a portion or a subset of PM10.

Sources of PM10 emissions include dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, and wind-blown dust from open lands (CARB, 2017a). Sources of PM2.5 emissions include combustion of gasoline, oil, diesel fuel, or wood (CARB, 2017a). PM10 and PM2.5 may be either directly emitted from sources (primary particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NO_X, and certain organic compounds (CARB, 2017a).

According to CARB, both PM10 and PM2.5 can be inhaled, with some depositing throughout the airways; PM10 is more likely to deposit on the surfaces of the larger airways of the upper region of the lung while PM2.5 is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation (CARB, 2017a). Short-term (up to 24 hours duration) exposure to PM10 has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB, 2017a). The effects of long-term (months or years) exposure to PM10 are less clear, although studies suggest a link between long-

term PM10 exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB, 2017a). Short-term exposure to PM2.5 has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days and long-term exposure to PM2.5 has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children (CARB, 2017a). According to CARB, populations most likely to experience adverse health effects with exposure to PM10 and PM2.5 include older adults with chronic heart or lung disease, children, and asthmatics and children and infants are more susceptible to harm from inhaling pollutants such as PM10 and PM2.5 compared to healthy adults because they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems (CARB, 2017a).

Toxic Air Contaminants

Toxic air contaminants (TACs) are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Exposure to TACs may increase a person's risk of developing cancer and/or other serious health effects. The carcinogenic potential of TACs is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer. TACs are emitted by a variety of industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust and may exist as particulates or as vapors (gases).

The emission of toxic substances into the air can be damaging to the environment as well. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food.

The Air Toxics "Hotspots" Information and Assessment Act (AB 2588) is a State law requiring facilities to report emissions of TACs to air districts. The program is designated to quantify the amounts of potentially hazardous air pollutants released, the location of the release, the concentrations to which the public is exposed, and the resulting health risks. AB 2588 identifies over 600 TACs, including TACs identified in the Clean Air Act (CAA). The USEPA has assessed this expansive list of toxics and identified 21 TACs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from on-road and off-road mobile sources. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. USEPA also extracted a subset of these 21 MSAT compounds that it now labels as the six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene.

Regional Setting

The Great Basin Air Pollution Control District (GBAPCD) maintains a network of air quality monitoring stations located throughout the Air Basin to measure ambient pollutant concentrations. The Bishop-line station, which is approximately 60 miles north of the project site, is the monitoring station most representative of the project site. This station monitors ozone, PM10, and PM2.5. There are no monitoring stations representative of the project site that monitor for CO, NO_2, or SO_2 because the Air Basin continues to be in attainment for these. The pollutant ambient concentration data for 2015 to 2017 are summarized in **Table 3.2-1,** *Ambient Air Quality Data*. As shown, there were days that O_3, PM10 and PM2.5 exceeded the CAAQS and/or NAAQS standards.

TABLE 3.2-1
AMBIENT AIR QUALITY DATA

Pollutant/Standard [a,b]	2015	2016	2017
O_3 (1-hour)			
Maximum Concentration (ppm)	0.076	0.070	0.077
Days > CAAQS (0.09 ppm)	0	0	0
O_3 (8-hour)			
Maximum Concentration (ppm)	0.070	0.066	0.072
4th High Concentration (ppm)	0.063	0.065	0.065
Days > CAAQS (0.070 ppm)	0	0	1
Days > NAAQS (0.070 ppm)	0	0	1
PM10 (24-hour)			
Maximum Concentration (µg/m^3)	289	74.9	215.7
Days > CAAQS (50 µg/m^3)	*[c]	*[c]	*[c]
Days > NAAQS (150 µg/m^3)	1	0	2
PM10 (Annual Average)	16.3	16.5	18.5
Annual Arithmetic Mean (20 µg/m^3)	*[c]	*[c]	*[c]
PM2.5 (24-hour)	97.1	19.8	21.0
Maximum Concentration (µg/m^3)	31	14.4	16.4
4th High Concentration (µg/m^3)	3	0	0
Days > NAAQS (35 µg/m^3)	*[c]	4	4.7
PM2.5 (Annual)	*[c]	*[c]	*[c]
Annual Arithmetic Mean (CAAQS/NAAQS 12 µg/m^3)	*[c]	*[c]	*[c]

[a] ppm = parts per million; µg/m^3 = micrograms per cubic meter; *Data not available
[b] Data compiled for the Bishop-Line Station
[c] There was insufficient data available to determine the value

Sources: CARB; 2019

Local Setting

The project would extend along approximately 6.3 miles of the Lower Owens River in the Eastern Sierra, just east of Lone Pine, California. The proposed project would encompass the stretch of river between Lone Pine Narrow Gauge Road and Highway (California State Route or SR) 136. The project area, defined by the perimeter of the Lower Owens River floodplain from Lone Pine Narrow Gauge Road south to SR 136, is largely a natural setting and is owned by the

Los Angeles Department of Water and Power (LADWP). The floodplain varies in width from 0.12 to 0.33 miles. Dominant floodplain vegetation includes salt grass meadow and tree and shrub willow woodland. A number of informal roads parallel the river on sandy, chalky bluffs. A few dirt roads enter the floodplain from the bluff. In 2013, a large range fire swept through about 50 percent of this floodplain. As a result of the fire, large woody debris occupies the channel margin and occasionally collects floating vegetation "islands".

Sensitive Receptors and Locations

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential effects of air pollution than others. Sensitive receptors are defined as any residence including private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. It also includes long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing. The closest sensitive receptors are the residential developments on the outskirts of Lone Pine located approximately 0.75 miles west of the project site boundaries, and an individual residence located north of Lone Pine Narrow Gauge Road, approximately 0.25 miles northeast of the northern edge of the project site. All other air quality sensitive receptors are located at greater distances from the project site. Impacts are quantified for the identified sensitive receptors.

3.2.2 Regulatory Framework

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The project is subject to air quality regulations developed and implemented at the Federal, State, and local levels. This section provides a summary of pertinent air quality regulations affecting the project at the Federal, State, and local levels.

Federal and State Regulations

The 1963 CAA was the first Federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the Federal level, USEPA is responsible for implementation of certain portions of the CAA including mobile source requirements. Other portions of the CAA, such as stationary source requirements, are implemented by State and local agencies.

The CAA establishes Federal air quality standards and specifies future dates for achieving compliance. The CAA also mandates that the State submit and implement a State Implementation Plan (SIP) for areas not meeting these standards. SIPs must include pollution control measures that demonstrate how the NAAQS will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions).

Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: O_3; NO_2; CO; SO_2; PM10; and lead. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and to adopt a NAAQS for PM2.5. The NAAQS were also amended in September 2006 to include an established methodology for calculating PM2.5 as well as revoking the annual PM10 threshold.

Table 3.2-2, *Ambient Air Quality Standards and Inyo County Attainment Status*, shows the NAAQS currently in effect for each criteria pollutant. The Air Basin is an area designated as non-attainment as it does not currently meet NAAQS for certain pollutants regulated under the CAA. The Air Basin does not meet the NAAQS for PM10, and is classified as non-attainment for this pollutant (USEPA, 2019).

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NO_X emissions have been lowered substantially, and the specification requirements for cleaner burning gasoline are more stringent.

State

California Air Resources Board

California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS apply to the same criteria pollutants as the CAA but also include State-identified criteria pollutants, which include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CARB has primary responsibility for ensuring the implementation of the CCAA,[1] responding to the CAA planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. Table 3.2-2 shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the state. As shown in Table 3.2-2, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants. Currently CO, NO_2, SO_2, PM2.5 and Lead are in attainment for CAAQS. However, ozone and PM10 are designated as non-attainment for CAAQS

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. Table 3.2-2 provides a summary of the attainment status of the Inyo County portion of the Air Basin with respect to the State standards. The Air Basin is designated as attainment for the California standards for sulfates and unclassified for hydrogen sulfide and visibility-reducing particles. Because vinyl chloride is a carcinogenic toxic air contaminant, CARB does not classify attainment status for this pollutant.

[1] Chapter 1568 of the Statutes of 1988.

TABLE 3.2-2
AMBIENT AIR QUALITY STANDARDS AND INYO COUNTY ATTAINMENT STATUS

Pollutant	Averaging Time	State Standard	Attainment Status for California Standard	Federal Primary Standard	Attainment Status for Federal Standard
Ozone	8 Hour	0.070 ppm	Non-Attainment	0.070 ppm	Attainment
	1 Hour	0.09 ppm		---	
Carbon Monoxide	8 Hour	9.0 ppm	Attainment	9 ppm	Attainment
	1 Hour	20 ppm		35 ppm	
Nitrogen Dioxide	Annual Average	0.030 ppm	Attainment	0.053 ppm	Attainment
	1 Hour	0.18 ppm		0.100 ppm	
Sulfur Dioxide	Annual Average	---	Attainment	0.030 ppm	Attainment
	24 Hour	0.04 ppm		0.14 ppm	
	1 Hour	0.25 ppm		0.075 ppm	
Respirable Particulate Matter (PM10)	Annual Arithmetic Mean	20 $\mu g/m^3$	Non-Attainment	---	Non-Attainment
	24 Hour	50 $\mu g/m^3$		150 $\mu g/m^3$	
Fine Particulate Matter (PM2.5)	Annual Arithmetic Mean	12 $\mu g/m^3$	Attainment	12.0 $\mu g/m^3$	Attainment
	24 Hour	---		35 $\mu g/m^3$	
Sulfates	24 Hour	25 $\mu g/m^3$	Attainment	---	---
Lead	Calendar Quarter	---	Attainment	1.5 $\mu g/m^3$	Attainment
	30-Day Average	1.5 $\mu g/m^3$		---	
	3-Month Rolling Average	---		0.15 $\mu g/m^3$	
Hydrogen Sulfide	1 Hour	0.03 ppm	Attainment	No Federal Standard	---
Vinyl Chloride	24 Hour	0.010 ppm	No information available	---	---
Visibility Reducing Particles	8 Hour	Extinction of 0.23/km; visibility of 10 miles or more	Unclassified	No Federal Standard	---

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter

Source: CARB, 2017b.

California Air Resources Board Air Quality and Land Use Handbook

CARB published the Air Quality and Land Use Handbook in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include avoid siting sensitive receptors within:

- 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day;
- 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and
- 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008 CARB approved the Truck and Bus regulation to reduce NOx, PM10, and PM2.5 emissions from existing diesel vehicles operating in California. The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, i.e., those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first method is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over eight years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would meet or exceed the 2010 engine emission standards for NOx and PM by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1, 2016 their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower NOx emissions. Thus, fleet owners choosing the second method must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel

vehicles. The regulation adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets to begin compliance by January 1, 2014. Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (e.g., engine retrofits) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

Regional

Great Basin Air Pollution Control District

The GBAPCD has jurisdiction over air quality planning for all of Alpine, Mono and Inyo Counties. While air quality in the Air Basin has improved, the Air Basin requires continued diligence to meet the air quality standards.

Owens Valley State Implementation Plan

The GBAPCD has adopted a series of air quality plans to meet the CAAQS and NAAQS within various areas of the Air Basin. The project is located within Owens Valley and therefore is subject to the 2016 Owens Valley Planning Area PM10 State Implementation Plan (SIP). The GBAPCD adopted the 2016 Owens Valley Planning Area PM10 SIP, which provides a plan to attain the NAAQS for PM10 and implement provisions to provide for the continued operation of existing dust control measures and for the implementation of additional measures in order to attain and maintain compliance with state and federal air quality standards.

Regional Transportation Plan

With regard to air quality planning, Inyo County adopted the 2015 Update to the Regional Transportation Plan (RTP) on September 16, 2015. The overall focus of the RTP is to develop a coordinated and balanced multi-modal regional transportation system that is financially constrained to the revenues anticipated over the life of the plan. Inyo County is currently undergoing the 2019 update to the RTP.

GBAPCD Rules and Regulations

Several GBAPCD rules adopted to implement portions of the District's Air Quality Plans may apply to the project. For example, Rule 401 requires implementation of best available fugitive dust control measures during active construction periods capable of generating fugitive dust emissions from earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. The project may be subject to the following rules and regulations:

Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events. The following is a list of rules which may apply to the project:

- Rule 400 – Visible Emissions: This rule states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view.
- Rule 401 – Fugitive Dust: This rule requires a person take all precautions to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the property line from which the emissions originates. Reasonable precautions include, but are not limited to:
  - Use, were possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;
  - Application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts;
  - Installation and use of hoods, fans, and fabric filters, to enclose and vent the handling of dusty materials; Adequate containment methods shall be employed during such handling operations;
  - Use of water, chemicals, chuting, venting, or other precautions to prevent particulate matter from becoming airborne in handling dusty materials to open stockpiles and mobile equipment; and
  - Maintenance of roadways in a clean condition.
- Rule 402 – Nuisance: This rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- Rule 404-A – Particulate Matter: This rule states that a person shall not discharge from any source whatsoever, particulate matter in excess of 0.3 grain per standard dry cubic foot of exhaust gas.
- Rule 404-B – Oxides of Nitrogen: This rule states that a person shall not discharge from fuel burning equipment having a maximum heat input rate of more than 1 ½ billion BTU per hour (gross), flue gas having a concentration of nitrogen oxides calculated as nitrogen dioxide (NO2) in parts per million parts of flue gas (ppm) by volume at 3 percent oxygen: 125 ppm with natural gas fuel, or 225 pm with liquid or solid fuel.
- Rule 431 – Particulate Emissions: This rule states that After January 1, 2007, no solid fuel burning appliances shall be permitted to be sold or installed within District boundaries unless said device is certified as meeting the emissions requirement of the USEPA for Phase II certification.

South Coast Air Quality Management District (SCAQMD) Air Quality Guidance Documents

The GBAPCD has not adopted thresholds or methodologies for determining significance of projects within its jurisdiction. As such, it permits the Lead Agency to determine the appropriate methodology and thresholds by which to analyze projects. Because the SCAQMD's thresholds are the most conservative of the surrounding Air Districts, the SCAQMD's Guidance and thresholds will be used to determine significance of this project.

The CEQA Air Quality Handbook was published by the SCAQMD in November 1993 to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The CEQA Air Quality Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. However, the SCAQMD is currently in the process of replacing the CEQA Air Quality Handbook with the Air Quality Analysis Guidance Handbook. While this process is underway, the SCAQMD recommends that lead agencies avoid using the screening tables in Chapter 6 (Determining the Air Quality Significance of a project) of the CEQA Air Quality Handbook, because the tables were derived using an obsolete version of CARB's mobile source emission factor inventory, and the trip generation characteristics of the land uses identified in these screening tables were based on the fifth edition of the Institute of Transportation Engineer's Trip Generation Manual, instead of the most current edition. Additionally, the lead agency should avoid using the on-road mobile source emission factors in Table A9-5-J1 through A9-5-L (EMFAC7EP Emission Factors for Passenger Vehicles and Trucks, Emission Factors for Estimating Material Hauling, and Emission Factors for Oxides of Sulfur and Lead). The SCAQMD instead recommends using other approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod) software, initially released in 2011 and updated in 2016 (SCAQMD, 1993).

The SCAQMD has published a guidance document called the Localized Significance Threshold Methodology for CEQA Evaluations that is intended to provide guidance in evaluating localized effects from mass emissions during construction (SCAQMD, 2008). The SCAQMD adopted additional guidance regarding PM2.5 in a document called Final Methodology to Calculate Particulate Matter (PM)2.5 and PM2.5 Significance Thresholds (SCAQMD, 2006). This latter document has been incorporated by the SCAQMD into its CEQA significance thresholds and Localized Significance Threshold Methodology.

3.2.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to air quality in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance.[2] Accordingly, a significant air quality impact would occur if the project would:

[2] The thresholds presented reflect the revisions to Appendix G of the CEQA Guidelines that were adopted on December 28, 2018.

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

AQ-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The project would result in a less than significant impact regarding odors (subset of new CEQA Checklist **AQ-4)**, as detailed in the Initial Study, because of the temporary nature of the emissions, the distance from the odor source and potential receptors, and the highly diffusive properties of exhaust, odors associated with project would be less than significant**.** Therefore, the environmental topic related to negative effects associated with objectionable odors is not evaluated in this section. Please see the Initial Study provided in Appendix A of this EIR.

Pursuant to the State *CEQA Guidelines* (Section 15064.7), a lead agency may consider using, when available, the significance criteria established by the applicable air quality management district or air pollution control district when making determinations of significance. The GBAPCD has not adopted thresholds or methodologies for determining significance of projects within its jurisdiction. As such, it permits the Lead Agency to determine the appropriate methodology and thresholds by which to analyze projects. Because the SCAQMD's thresholds are the most conservative of the surrounding Air Districts, the SCAQMD's Guidance and thresholds will be used to determine significance of this project. The potential air quality impacts of the Project are, therefore, evaluated according to the most recent thresholds adopted by the SCAQMD in connection with its CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent SCAQMD guidance as discussed previously.[3]

Construction Emissions

Given that construction impacts are temporary and limited to the construction phase, the SCAQMD has established numeric indicators of significance specific to construction activity. Based on the indicators in the SCAQMD CEQA Air Quality Handbook, the Project would potentially cause or contribute to an exceedance of an ambient air quality standard if the following would occur:

- Regional construction emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed daily regional emissions thresholds (SCAQMD, 2015):
  - 75 pounds a day for VOC;
  - 100 pounds per day for NOx;
  - 550 pounds per day for CO;

[3] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from commercial and residential land use projects such as the Project. As a result, lead emissions are not further evaluated in this Draft EIR.

  - 150 pounds per day for SO_x;
  - 150 pounds per day for PM10; or
  - 55 pounds per day for PM2.5.

In addition, the SCAQMD has developed a methodology to assess the potential for localized emissions to cause an exceedance of applicable ambient air quality standards or ambient concentration limits. Impacts would be considered significant if the following would occur:

- Maximum daily localized emissions of NO_X and/or CO during construction are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the Project Site greater than the most stringent ambient air quality standards for NO_2 and/or CO (SCAQMD, 2008).
- Maximum daily localized emissions of PM10 and/or PM2.5 during construction are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site to exceed 10.4 $\mu g/m^3$ over 24 hours (SCAQMD Rule 403 control requirement).

Operational Emissions

The SCAQMD has established numerical emission indicators of significance for operations. The numerical emission indicators are based on the recognition that the Air Basin is a distinct geographic area with a critical air pollution problem for which ambient air quality standards have been promulgated to protect public health (SCAQMD, 1993). The SCAQMD has established numeric indicators of significance in part based on Section 182(e) of the Clean Air Act which identifies 10 tons per year of VOC as a significance level for stationary source emissions in extreme non-attainment areas for ozone (SCAQMD, 1993). As shown in Table 3.2-2, the Air Basin is designated as extreme non-attainment for ozone. The SCAQMD converted this significance level to pounds per day for ozone precursor emissions (10 tons per year × 2,000 pounds per ton ÷ 365 days per year = 55 pounds per day). The numeric indicators for other pollutants are also based on Federal stationary source significance levels. Based on the indicators in the SCAQMD CEQA Air Quality Handbook, the project would potentially cause or contribute to an exceedance of an ambient air quality standard if the following would occur:

- Regional operational emissions exceed any of the following SCAQMD prescribed daily regional emissions thresholds (SCAQMD, 2015):
  - 55 pounds a day for VOC;
  - 55 pounds per day for NOx;
  - 550 pounds per day for CO;
  - 150 pounds per day for SOx;
  - 150 pounds per day for PM10; or
  - 55 pounds per day for PM2.5.

In addition, the SCAQMD has developed a methodology to assess the potential for localized emissions to cause an exceedance of applicable ambient air quality standards. Impacts would be considered significant if the following were to occur:

- Maximum daily localized emissions of NOx and/or CO during operation are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site greater than the most stringent ambient air quality standards for NO_2 and/or CO (SCAQMD, 2015).
- Maximum daily localized emissions of PM10 and/or PM2.5 during operation are greater than the applicable localized significance thresholds, resulting in predicted ambient concentrations in the vicinity of the project site to exceed 2.5 $\mu g/m^3$ over 24 hours (SCAQMD Rule 1303 allowable change in concentration).

Carbon Monoxide Hotspots

With respect to the formation of CO hotspots, the project would be considered significant if the following would occur within one-quarter mile of a sensitive receptor:

- The project would cause or contribute to an exceedance of the CAAQS one-hour or eight-hour CO standards of 20 or 9.0 parts per million (ppm), respectively.

Toxic Air Contaminants

Based on criteria set forth by the SCAQMD, the Project would expose sensitive receptors to substantial concentrations of toxic air contaminants if any of the following were to occur (SCAQMD, 1993; SCAQMD, 2015):

- The Project would emit carcinogenic materials or TACs that exceed the maximum incremental cancer risk of ten in one million or a cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to 1 in 1 million) or an acute or chronic hazard index of 1.0.

Methodology

The evaluation of potential impacts to regional and local air quality that may result from the construction and long-term operations of the project is conducted as follows. Additional details are provided in the emission modeling worksheets in Appendix D.

Consistency with Air Quality Management Plan

GBAPCD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment of the NAAQS (e.g., PM10). GBAPCD's 2016 Owens Valley Planning Area PM10 State Implementation Plan (Owens Valley SIP) contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS. These strategies are developed, in part, based on regional growth projections.

The 2016 Owens Valley SIP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of GBAPCD, return clean air to the region, and minimize the impact on the economy. Projects that are consistent with the assumptions used in

the 2016 Owens Valley SIP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the SIP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the SIP would not jeopardize attainment of the air quality levels identified in the SIP, even if they exceed significance thresholds.

Construction Impacts

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date and the greatest potential overlap of construction activities) and applying the mobile source and fugitive dust emissions factors. The emissions are estimated using CalEEMod (Version 2016.3.2) software, an emissions inventory software program. CalEEMod is based on outputs from OFFROAD and the Emission Factors (EMFAC) model, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including heavy-duty off-road equipment, and on-road vehicles. Construction haul and vendor truck emissions during construction were evaluated using regional heavy-duty truck emission factors from EMFAC2014. Daily truck trips and trip length data were used to assess emissions from truck exhaust, as well as typical CARB idling times of local emissions on-site. The input values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in the emission modeling worksheets in (Appendix D).

Subphases of construction would include hand clearing of vegetation; mechanical clearing of vegetation; spoils placement; and construction of improvements. Both hand and mechanical vegetation would result in materials that would be placed in the identified spoils areas (see Figure 2-3). Construction improvements include the construction of the access roads to the launch and take-out areas as well as the launch and take-out facilities. Heavy-duty equipment and vendor supply trucks would be used during construction activities. The maximum daily regional emissions from these activities are estimated by construction phase and compared to the SCAQMD significance thresholds. The maximum daily regional emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of project construction.

The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards or ambient concentration limits without project-specific dispersion modeling. As the size of a project area and the distance between the project area increase, the amount of daily emissions needed to adversely impact sensitive receptors also increases. For example, emissions from a 1-acre site at 25 meters from the project site could require 231 lbs/ day of CO to potentially exceed regulatory thresholds whereas a 1-acre site at 200 meters, or a 2-acre site at 25 meters would need 1,545 and 346 lbs/day respectively to have the potential to exceed AAQS. While the project lies outside the boundaries of the SCAQMD, the Localized Significance Thresholds (LST) are

conservative with respect to allowed emissions at varying distances from a project site. This analysis uses the SCAQMD's screening criteria to support a qualitative evaluation of impacts from localized project emissions. The project site is 0.25 miles (400 meters) from the nearest sensitive receptor. However, the project is approximately 6.3 miles in length and therefore, the distance between the active equipment and each sensitive receptor will vary significantly throughout the length of the project site, minimizing the exposure to any single sensitive receptor. The SCAQMD thresholds used to support the analysis represent the minimum emissions levels allowed at a distance of 200 meters for a 1-acre site,[4] which represents a conservative emissions inventory.[5]

The project's potential health outcomes (cancer, or other acute or chronic conditions) related to TACs exposure from airborne emissions during the project's construction is evaluated qualitatively.

Operational Impacts

The analysis quantified emissions from the following operational sources: vehicle trips traveling to and from the project area, and annual maintenance of the channel. While it is not anticipated that launches would occur on the same days as maintenance, the evaluation assumes some overlap could occur in order to provide a conservative analysis. Operational impacts associated with vehicle trips were assessed for the project buildout year of 2021, and maintenance activities for 2021 (hand clearing for 2 years) and 2023 (mechanical clearing for 18 years).

The operational emissions were estimated using the CalEEMod software to forecast the project's daily regional emissions that would occur during long-term project operations. Mobile source emissions conservatively assume that each of the 4,400 yearly launches would result in one round-trip per launch. Trip lengths were estimated based on current visitation to the area and conservatively assumes approximately 272 miles round trip.

While the project would include the installation of vault toilets and trash receptacles in the parking areas as well as the launch and take-out facilities adjacent to the river, no energy source would be implemented. In addition, given the nature of the facilities, no area source or architectural coating emissions would result. Operational activities would be limited to the annual maintenance of the channel and associated facilities. Operational air quality impacts are assessed based on the incremental increase in emissions compared to baseline conditions. Currently the project area is undeveloped and therefore, all project emissions are new emissions. The maximum daily emissions from operation of the project are compared to the SCAQMD daily regional significance thresholds.

Similar to the construction analysis, the localized effects from the operational emissions were evaluated qualitatively using the SCAQMD's Localized Significance Thresholds to support the analysis.

4 Data obtained from SCAQMD's Source Receptor Area 12, (most conservative thresholds).

5 SCAQMD's methodology states that if a project is less than 1-acre the 1-acre thresholds are to be used.

The potential for the project to cause or contribute to CO hotspots was evaluated qualitatively by comparing potential increase in traffic at nearby intersections with prior studies conducted by SCAQMD in support of their AQMPs as the SCAQMD's traffic conditions lend to increased standing emissions at intersections and therefore, conservative number of vehicles that can pass through that intersection in a given day before AAQS thresholds are exceeded.

The project's potential health outcomes (cancer, or other acute or chronic conditions) related to TACs exposure from airborne emissions during the project's operation is evaluated qualitatively.

3.2.4 Project Impacts

Air Quality Plans

Threshold AQ-1: The project would result in a significant impact if the project would conflict with or obstruct implementation of the applicable air quality plan.

Impact Statement AQ-1: *Construction and operation of the project would not conflict with or obstruct implementation of the applicable air quality plans. Therefore, impacts would be less than significant.*

The project would provide recreational access to an approximately 6.3-mile section of the newly rewatered, 62-mile Lower Owens River. The proposed project would result in the development of facilities for recreational users to enter and exit the river and would allow unimpeded navigation for non-motorized watercrafts, such as kayaks, stand-up paddle boards, and canoes. Specifically, the proposed project would include construction and maintenance of the water trail and boat launch and take-out facilities, which would provide limited amenities in addition to access to the river.

Construction

Project construction is anticipated to begin in December 2019. For the purposes of analysis, construction activities are anticipated to occur between December 2019 and April 2022. Construction would occur over an approximately seven-month period, any time between the months of September and March (considered a work season) to avoid disrupting nesting birds. Construction of the ORWT would consist of two phases: 1) in-channel work for the water trail, and 2) construction of the boat launch and take-out facilities. Construction for the water trail and boat launch and take-out facilities features would most be undertaken by one or more specialist contractors and may occur in separate years with the in-channel work commencing before construction of the boat launch and take-out facilities. Construction of the water trail is anticipated to require the use of a combination of in-channel and land-based equipment while construction of boat launch and take-out facilities features is anticipated be constructed solely with land-based equipment.

Under this criterion, it is recommended that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related, such as resultant employment or residential units) upon which the air quality plan is based. The project would result in an increase in short-

term employment compared to existing conditions. Although the project would require some workers (up to 6 daily) over the construction process, these jobs are temporary in nature. Construction jobs under the project would not result in new, long-term employment positions and therefore, would not conflict with the long-term employment projections upon which the air quality management plan (Owen's Valley SIP) is based.

The project would be located in an area that is non-attainment for ozone (State) and PM10 (State and/or Federal). The Owens Valley SIP implements several dust control measures that are included to reduce PM emissions from the dry lakebed areas of the Owen's Valley area. While the project is not associated with a dry lakebed, the project would install all-weather surface on the access roads leading to the launch and take-out areas where main travel would occur. The project is subject to both GBAPCD Rules 400 and 401. All of these measures would ensure that PM10 emissions are reduced within Owens Valley SIP area and therefore, the project would be consistent with the SIP.

Because the Project would not conflict with the control strategies intended to reduce emissions from construction equipment (compliance with GBAPCD Rules 400 and 401 to reduce fugitive emissions) and the project would implement applicable dust control measures outlined within the SIPas required, the project would not conflict with or obstruct implementation of the 2016 Owens Valley SIP, and impacts during the construction phase would be less than significant.

Operations

The 2016 Owens Valley SIP was prepared to accommodate growth, reduce the levels of pollutants within the areas under the jurisdiction of GBAPCD, return clean air to the region, and minimize the impact on the economy. Projects that are considered consistent with the SIP would not interfere with attainment because this growth is included in the projections used in the formulation of the SIP.

The project site is located in Inyo County and is subject to the County General Plan and the Lower Owens River Plan, which provides mitigation for impacts related to historical groundwater pumping of the river. (See Section 3.8, Land Use and Planning, for more discussion regarding the Lower Owens River Plan and Section 3.7, Hydrology and Water Quality, for discussion regarding the groundwater.) The project would provide a recreational opportunity and does not include housing or long term employment. As such, the project would not generate growth beyond the range of development anticipated within the regional forecast for Inyo County. The project would not increase or induce residential density growth or employment.

Additionally, the project would install all-weather surface on the access roads leading to the launch and take-out areas where main travel would occur. The use of an all-weather surface would reduce PM emissions from vehicles accessing the project area in accordance with dust control measures outlined in the SIP.

As the project would not induce a growth increase beyond what was established in the County's General Plan and the growth accounted for in the SIP and the project would implement applicable dust control measures in the SIP for the reduction of PM10 emissions, the project would not conflict with or obstruct implementation of the 2016 Owens Valley SIP. Therefore, impacts would be less than significant.

Cumulative Impacts

Threshold AQ-2: The project would result in a significant impact if the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Impact Statement AQ-2: *Construction and operation of project would result in emissions of criteria air pollutants and pollutant precursors. However, the project would not result in a cumulatively considerable net increase in any criteria pollutants for which the region is in non-attainment. Therefore, impacts would be less than significant.*

Construction

The Air Basin is currently in non-attainment under Federal or State standards for ozone and/or PM10. The project would result in the emission of criteria pollutants for which the project area is in non-attainment during construction (Ozone and PM10). As discussed previously, since GBAPCD has not identified significance thresholds associated with criteria pollutants, regional emissions are compared to the SCAQMD significance thresholds to determine project significance.

The worst-case daily construction emissions were calculated as maximum daily construction emissions for each subphase. The project would also limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time in compliance with the ATCM. These measures would also be implemented at other construction projects in the Air Basin as required (i.e., the related projects in the project area). **Table 3.2-3**, *Maximum Unmitigated Regional Construction Emissions (Non-Attainment)*, identifies project emissions of VOC, NOx and PM10 associated with the proposed project. The table identifies emissions from hand clearing occurring at the same time as spoils placement; mechanical equipment clearing of the channel occurring at the same time as spoils placement; construction improvements, and a maximum day scenario. The maximum day scenario assumes that all activities occur at the same time.

As shown in Table 3.2-3, construction-related daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) would be below SCAQMD significance thresholds.

TABLE 3.2-3
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (NON-ATTAINMENT) (POUNDS PER DAY)[a]

Source	VOC	NOX	PM10
Hand Clearing and spoils placement	1	4	1
Mechanical Clearing and spoils placement	2	11	1
Construction Improvements	2	21	10
Maximum Daily Emissions [b]	**6**	**36**	**12**
SCAQMD Thresholds	75	100	150
Exceed Threshold?	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix D.

[b] Analysis accounted for emissions from overlapping phases.

Source: ESA, 2019

The emissions from construction of the project would not exceed any applicable regional significance thresholds, nor are emissions anticipated to be significant at a local level (see discussion in AQ-3). Therefore, emissions are not expected to result in ground level concentrations that would exceed the NAAQS or CAAQS. Based on the methodology described in Section 3.2.3.2, for projects that do not exceed regulatory thresholds, the project would not result in cumulative impacts. Since the project is less than significant on a project level, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Operation

Operational criteria pollutant emissions were calculated for maintenance and mobile sources for the project buildout years of 2021 and 2023. Results of the non-attainment criteria pollutant calculations are presented in **Table 3.2-4**, *Maximum Unmitigated Regional Operational Emissions.* The analysis evaluated emissions from site operations (mobile emissions from visitors to the site) and annual channel clearing (hand and/or mechanical) and spoils placement. It also includes a maximum daily scenario which assumes that site operations occur at the same time as the mechanical channel clearing and spoils placement scenario. As shown, the operational daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) would be below the SCAQMD thresholds of significance.

TABLE 3.2-4
MAXIMUM UNMITIGATED REGIONAL OPERATIONAL EMISSIONS (NON-ATTAINMENT) (POUNDS PER DAY)[a]

Source	VOC	NOX	PM10
Site Operations	1	2	10
Maintenance - Hand Clearing with spoils placement	1	4	1
Maintenance - Mechanical Clearing with spoils placement	1	7	1
Maximum Daily Emissions[b]	**2**	**9**	**11**
SCAQMD Thresholds	55	55	150
Exceed Threshold?	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix D.

[b] Analysis accounted for emissions from overlapping phases.

SOURCE: ESA, 2019

In reality, a high percentage of future visitors to the river trail likely already travel within the Air Basin and thus, generate mobile-source emissions in the basin. In such cases, regional mobile source emissions could be unchanged or potentially reduced if the new trail were to be located closer to visitors' existing recreational uses. As such, the emissions represent the most conservative emissions assessment.

Future operations would generate ozone precursors (i.e., VOCs and NOx), and PM10. As shown in Table 3.2-4 and discussed under AQ-3 below, the project would not exceed the regional significance thresholds nor would the project result in significant localized impacts. Therefore, emissions are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Based on SCAQMD methodology, for projects that do not exceed regulatory thresholds, the project would not result in cumulative impacts. Since the project is less than significant on a project level, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors during operation. Therefore, the project would result in a less than significant impact during operation.

Sensitive Receptors

Threshold AQ-3: The project would result in a significant impact if the project would expose sensitive receptors to substantial pollutant concentrations.

Impact Statement AQ-3: *Construction and operation of the project would result in emissions of criteria pollutants, ozone precursors and toxic air contaminants. However, the project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts would be less than significant.*

Localized Emissions

As indicated above, the nearest sensitive receptor is approximately 0.25 mile (400 meters) from the project site. The majority of the sensitive receptors are over 0.75 miles from the project site. Emissions disperse with distance and their impacts on nearby receptors are minimized. Additionally, the project is over 6 miles long and therefore any one receptor would be impacted by project emission for only the amount of time the activities occurred near that receptor.

The methodology described in Section 3.2.3.2 uses screening criteria to determine if a project has the potential to result in a localized impact. Localized impacts are only concerned with emissions occurring onsite. For this project, emissions are primarily from visitor trips which are not typically considered on-site emissions. However, to comparatively demonstrate that the project emissions would not result in localized impacts, all estimated emissions are compared against the most restrictive emissions limits associated with a 1-acre site and at a distance of 200 meters from the project site. As shown in **Table 3.2-5**, *Maximum Unmitigated Localized Emissions,* project emission would be below these conservative emissions limits.

TABLE 3.2-5
MAXIMUM UNMITIGATED LOCALIZED EMISSIONS (POUNDS PER DAY)

Source	NOx	CO	PM10	PM2.5
Construction				
Maximum Daily Emissions	36	53	12	6
SCAQMD Thresholds	39	1,545	48	17
Exceed Threshold?	No	No	No	No
Operational				
Maximum Daily Emissions	9	47	11	3
SCAQMD Thresholds	39	1,545	29	4
Exceed Threshold?	No	No	No	No
Source: ESA, 2019				

Based on distance from onsite activities to nearby receptors, dispersion associated with distance and the comparison to the most conservative SCAQMD LST thresholds, project emissions would not expose receptors to substantial pollutant concentrations during construction. Therefore, project-related localized emissions would result in a less than significant impact.

Carbon Monoxide Hotspots

The potential for the project to cause or contribute to CO hotspots is evaluated based on vehicle traffic through localized intersections. The project would result in limited operational trips, up to 96 trips per day during the peak season. This results in minimal impacts to local intersections even assuming all vehicles occur at peak hour and all pass through the same intersections. SCAQMD methodology compares project intersections (both intersection geometry and traffic volumes) with prior studies conducted by SCAQMD in support of their AQMPs and considering existing background CO concentrations. As discussed below, this comparison demonstrates that the project would not cause or contribute considerably to the formation of CO hotspots where

daily vehicles through any one intersection is less than 100,000 vehicles per day. Given the remote location of the project (east of Lone Pine, CA), and the minimal amount of operational traffic [96 round trips (192 one-way trips)] through a single intersection, CO concentrations at project-used intersections would remain well below the ambient air quality standards. Therefore, no further CO analysis is warranted or required.

Toxic Air Contaminants

Construction and operation of the project would result in short-term emissions of diesel PM, a known carcinogen. The exhaust of off-road heavy-duty diesel equipment would emit diesel PM during both construction and annual maintenance activities associated with improvements and channel clearing.

OEHHA recommends a health risk assessment be conducted for any project that disturbs more than one acre and lasts more than two months. The construction period for the proposed project would exceed two months and would disturb more than one acre. However, as emission disperse over distance risk is confined to receptors within 1,000 feet of the proposed development. Additionally, the length of the project (6 miles) from launch to take-out minimizes the amount of time any single activity is near any given receptor, thus risk to receptors over 1,000 feet from the active portion of the development would negligible. Because the nearest sensitive receptors are located over 1,000 feet and the project is over 6 miles in length, a quantitative health risk assessment is not warranted, and risk to sensitive receptors would be minimal. Impacts would be less than significant.

Health Impacts

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. The health impacts associated with exposure to criteria pollutants are evaluated by air districts on a regional level based on all sources in the region and the region's attainment of the NAAQS.

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*) (SCAQMD, 2014) (SJVAPCD, 2014), the CEQA criteria pollutants significance thresholds from the air district were set at emission levels tied to the region's attainment status, they are emission levels at which stationary pollution sources permitted by the air district must offset their emissions and CEQA project must use feasible mitigations, and they are not intended to be indicative of any localized human health impact that a project may have.

The primary health concern with exposure to NO_X emissions is the secondary formation of ozone. Based on discussions with air quality management district staff (SCAQMD, 2016), and as the *amicus curiae* briefs submitted for the Friant Ranch Case suggested, because of the complexity of ozone formation and given the state of environmental science modeling in use at this time, it is infeasible to determine whether, or the extent to which, a single project's precursor (i.e., NO_X and VOCs) emissions would potentially result in the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary formed emissions. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to

determine the ultimate concentration and location of ozone. Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NO_X or VOCs emissions from local level (project level). Notwithstanding these scientific constraints, the disconnect between Project level NO_X emissions and ozone-related health impact cannot be bridged at this time.

These ambient air quality standards were established at levels that provide public health protection and allow adequate margin of safety, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. As shown in Table 3.2-5, project-related construction and operational emissions would not exceed the LSTs. As a result, localized exceedances of the ambient air quality standards would not occur during construction or operational activities.

Attainment/Maintenance Criteria Pollutants

Threshold AQ-4: The project would result in a significant impact if the project would result in other emissions (such as those leading to odor) adversely affecting a substantial number of people.

Impact Statement AQ-4: *Construction and operation of project would emit criteria pollutants and ozone precursors for which the Air Basin is considered an attainment or maintenance area. However, it would not result in emissions that would adversely affect a substantial number of people. Therefore, impacts would be less than significant.*

The project is in attainment/maintenance for CO, SOx and PM2.5, however emissions of these pollutants still have the potential to result in exceedances to the State and federal AAQS, which could impact the air quality within all or part of the Air Basin. Therefore, to determine if the project would result in emissions that would adversely affect a substantial number of people, construction and operational emissions of CO, SOx and PM2.5 are compared to the appropriate SCAQMD's regulatory thresholds.

Table 3.2-6, *Maximum Unmitigated Regional Construction Emissions (Attainment/Maintenance)*, identifies project emissions of CO, SOx and PM2.5 associated with the construction of the proposed project. The table identifies emissions from hand clearing occurring at the same time as spoils placement; mechanical equipment clearing of the channel occurring at the same time as spoils placement; construction improvements, and a maximum day scenario. The maximum day scenario assumes that all activities occur at the same time. As shown, construction-related daily emissions for these criteria pollutants would be below the significance thresholds.

TABLE 3.2-6
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (ATTAINMENT/MAINTENANCE) (POUNDS PER DAY)[a]

Source	CO	SOx	PM2.5
Hand Clearing with spoils placement	21	<1	<1
Mechanical Clearing with spoils placement	15	<1	1
Construction Improvements	17	<1	5
Maximum Daily Emissions [b]	**53**	**<1**	**6**
SCAQMD Thresholds	550	150	55
Exceed Threshold?	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix D.

[b] Analysis accounted for emissions from overlapping phases.

Source: ESA, 2019

Table 3.2-7, *Maximum Unmitigated Regional Operational Emissions (Attainment/Maintenance)*, identifies project emissions of CO, SOx and PM2.5 associated with the operation of the proposed project. The analysis evaluated emissions from site operations (mobile emissions from visitors to the site) and maintenance, which includes hand clearing and mechanical clearing and transport to the spoil areas. As shown, operational-related daily emissions for these criteria pollutants would be below SCAQMD significance thresholds.

TABLE 3.2-7
MAXIMUM UNMITIGATED REGIONAL OPERATIONAL EMISSIONS (ATTAINMENT/MAINTENANCE) (POUNDS PER DAY)[a]

Source	CO	SOx	PM2.5
Site Operations	27	<1	3
Maintenance - Hand Clearing with spoils placement	20	<1	<1
Maintenance - Mechanical Clearing with spoils placement	9	<1	<1
Maximum Daily Emissions[b]	**47**	**<1**	**3**
SCAQMD Thresholds	550	150	55
Exceed Threshold?	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix D.

[b] Analysis accounted for emissions from overlapping phases.

Source: ESA, 2019

As emissions of criteria pollutants of concern that are in attainment or maintenance within the Air Basin do not exceed regional emissions thresholds, the proposed project would not result in emissions that would greatly affect a substantial number of people. Therefore, impacts from the project would be less than significant.

3.2.5 Cumulative Impacts

The project is located in the Great Basin Valleys Air Basin which is under the jurisdiction of the GBAPCD. However, the GBAPCD does not have any adopted guidance for determining significance with respect to cumulative impacts. Additionally, the GBAPCD allows the lead agency to use the thresholds they deem most appropriate to the project area. As the SCAQMD has one of the strictest guidance and thresholds of the nearby air districts, the methodology and thresholds of the SCAQMD have been adopted for use in determining project significance.

The SCAQMD CEQA Air Quality Handbook states that the "Handbook is intended to provide local governments, project proponents, and consultants who prepare environmental documents with guidance for analyzing and mitigating air quality impacts of projects (SCAQMD, 1993)." The SCAQMD CEQA Air Quality Handbook also states that "[f]rom an air quality perspective, the impact of a project is determined by examining the types and levels of emissions generated by the project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of air pollution thresholds established by the District (SCAQMD, 1993)." The SCAQMD has also provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality as discussed below (SCAQMD, 2003):

> *As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR… projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.*

Because the GBAPCD and the County have not adopted specific significance thresholds for air quality impacts, it is appropriate to rely on thresholds established by the SCAQMD (refer to *CEQA Guidelines* Section 15064.7). While it may be possible to add emissions from the list of related projects and the project, it would not provide meaningful data for evaluating cumulative impacts under CEQA because neither the GBAPCD, County nor the SCAQMD have established numerical thresholds applicable to the summation of multiple project emissions for comparison purposes. Additionally, regional emissions from a project have the potential to affect the Air Basin as a whole, and unlike other environmental issue areas, such as aesthetics or noise, it is not possible to establish a geographical radius from a specific project site where potential cumulative impacts from regional emissions would be limited. Meteorological factors, such as wind, can disperse pollutants, often times tens of miles downwind from a project site. Therefore, consistent with accepted and established SCAQMD cumulative impact evaluation methodologies, the potential for the project to result in cumulative impacts from regional emissions is assessed based on the SCAQMD project level thresholds.

The project would result in emissions of criteria air pollutants for which the region is in non-attainment during both construction and operation. The Air Basin fails to meet ambient air quality standards for O_3, and PM10, and therefore is designated as a "non-attainment" area for these pollutants. Although Air Basin is in non-attainment for ozone and PM10, the emissions associated with project construction would not be cumulatively considerable, as the emissions would fall below daily regional significance thresholds.

With respect to the project's short-term construction-related air quality emissions and cumulative conditions, GBAPCD has developed strategies to reduce criteria pollutant emissions outlined in the air quality plans pursuant to the Federal CAA mandates. Construction of the project would comply with GBAPCD Rules 400 and 401, which focuses on reducing fugitive dust emissions and limiting heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time. Consistent with SCAQMD guidance for cumulative impacts, regional and localized emissions would be less than significance thresholds as shown above in Tables 3.2-3, 3.2-5, and 3.2-6. As such, the project's contribution to cumulatively significant air quality impacts during construction would not be cumulatively considerable. Cumulative impacts would be less than significant for regional and localized criteria pollutants during construction.

As discussed above, peak daily operational-related emissions of criteria pollutants would not exceed SCAQMD regional or local significance thresholds (see Tables 3.2-4, 3.2-5 and 3.2-7). By following SCAQMD's cumulative air quality impact methodology, implementation of the project would not result in an addition of criteria pollutants such that cumulative impacts, in conjunction with related projects in the region, would occur. Therefore, the project's contribution to cumulatively significant operational air quality impacts would not be cumulatively considerable. Cumulative impacts would be less than significant for regional and localized criteria pollutants during project operations.

3.2.6 Mitigation Measures

The project would result in less than significant air quality impacts. Therefore, no mitigation measures are necessary.

3.2.7 Level of Significance After Mitigation

No mitigation measures are necessary since the project would result in less than significant air quality impacts.

3.3 Biological Resources

This section evaluates the potential impacts of construction, operation and maintenance of the project on biological resources in the project vicinity. More specifically, this section documents the results of a literature review, biological surveys, and describes the environmental setting of the study area, including plant communities, habitats, and special-status biological resources that have been documented on-site or have the potential to occur on-site. This section provides an analysis of potential direct or indirect project-related impacts to special-status biological resources within the context of applicable environmental regulations, and provides recommendations to mitigate these effects. This analysis is based on the Biological Technical Report, prepared by ESA, that is available at the Inyo County Water Department.

3.3.1 Environmental Setting

Regional Setting

The study area is located within the southern end of the Owens Valley just east of Lone Pine along approximately 6.3 river-miles of the Lower Owens River, which connects to the Owens Lake. Significant regional geographic features around the area include the rest of the Owens Valley to the north, Inyo Mountains to the east, Owens Lake to the south, and Sierra Nevada range to the west. Most of the Owens Valley has high desert climate characterized by hot summers and cold winters; however, the region has experienced severe drought conditions in recent years. The Sierra Nevada greatly influences the climate of the Owens Valley, which is characterized by abundant sunshine, low precipitation, moderate to low humidity, frequent winds, and high potential evapotranspiration. Vegetation is largely influenced by the arid and semiarid conditions of the region, salinity of soil in many locations, and the presence of a shallow water table (LADWP and Ecosystem Sciences 2010).

The study area is within the Owens Lake watershed and is located near the lowest point of the Owens Valley near the dry lake. The Owens River was historically a large, flowing river with peak flows at well over 3,000 cfs, but since 1913, approximately 62 miles of the Owens River and Owens River Delta had been a mostly dry water course due to diversion of river flow by the City of Los Angeles into the Los Angeles Aqueduct. However, since the implementation of the LORP in 2006, which was a joint effort by LADWP and Inyo County to return water to the Lower Owens River and restore riverine-riparian habitat on a regional ecosystem scale, a perpetual regulated minimum flow of 40 cfs is guaranteed, with additional springtime water releases of up to 200 cfs based on the runoff forecast (e.g., additional seasonal habitat flows do not occur in drought years). Currently, flow within the study area averages 50 cfs, and the river is highly controlled with unvarying flows creating a canal-like environment, so the current system lacks the natural disturbance regime and fluvial processes historically provided by the river. Approximately 6-9 cfs are currently provided to the Delta Habitat Area (DHA), along with seasonal habitat flows into the DHA when available.

The topography, soils, and vegetation are indicative of these historical changes and fluctuations in the current hydrology of the area. As a result, much of the study area is comprised of a mosaic of

different types of riverine-riparian habitats. In addition, the study area has also been largely altered by cattle grazing from managed ranching, which has occurred since the late 19th century.

Local Setting

Natural Communities

The natural communities within the study area are described below according to *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009). Acreages of each natural community in the study area are summarized in **Table 3.3-1**. Alternate names for communities taken from the *Draft Lower Owens River Project 2018 Annual Report* are indicated in parentheses in the descriptions (LADWP and Inyo County 2018a). Natural communities that are considered a sensitive natural community by CDFW as listed in the California Natural Community List (CDFW 2018a) are also identified.

TABLE 3.3-1
NATURAL COMMUNITIES

Natural Community**	Acres	State Rank[1]
Black Willow Woodland* (Riparian Forest)	17.0	S3
Sandbar Willow Woodland (Riparian Shrub)	6.1	S4
Hardstem Bulrush Marsh* (Marsh)	117.6	S3S4
Common Reed Marsh (Reedgrass or Reed)	17.3	S4
Saltmarsh Bulrush Marsh* (Wet Meadow)	175.3	S3
Saltgrass Flats (Alkali Meadow)	86.4	S4
Rubber Rabbitbrush – Nevada Saltbush Scrub* (Alkali Scrub)	8.9	S5-S4-S3
Rubber Rabbitbrush Scrub – Saltgrass Flats (Alkali Scrub/Meadow)	16.1	S5-S4
Allscale Scrub (Upland Scrub)	191.7	S4
Open Water (Water)	26.2	N/A
Disturbed (Road)	22.6	N/A
Total	**685.2**	

* Asterisk indicates that an alliance/association is considered sensitive by CDFW.

** Parentheses indicates vegetation classification in the LORP vegetation map.

1 CDFW state conservation rank denotes the rarity of a vegetation type within the state as follows:
S1 = Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled – Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable – Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure – Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
S5 = Secure – Common, widespread, and abundant in the state.

Jurisdictional Resources

A preliminary jurisdictional assessment was prepared subsequent to the field survey and was based on review of aerial photographs (Google Earth 2018, LADWP and Inyo County 2018b), the field-based vegetation map, and supplemented by information collected in the field and literature references to identify features within the study area that are potentially subject to USACE,

RWQCB, and CDFW jurisdiction and regulatory authority. A formal jurisdictional delineation was not conducted.

Table 3.3-2 quantifies the areas regulated by the USACE, RWQCB, and CDFW within the study area.

TABLE 3.3-2
POTENTIALLY JURISDICTIONAL AREAS

Jurisdiction Types	Acres
USACE/RWQCB Wetlands	419.6
USACE/RWQCB Non-Wetlands	26.2
CDFW Riparian	470.1

SOURCE: ESA, 2018

U.S. Army Corps of Engineers/Regional Water Quality Control Board Jurisdiction

Jurisdictional wetland and non-wetland "waters of the U.S." regulated by the USACE and RWQCB are found within the study area. Since a formal jurisdictional delineation of the study area was not conducted, potential USACE/RWQCB jurisdiction is presumed for non-wetland "waters of the U.S." based on OHWM (i.e., based on aerial photographs and vegetation mapping of open water, and review of the National Wetlands Inventory's Wetlands Mapper [USFWS 2018b]).

Wetland "waters of the U.S." under USACE/RWQCB jurisdiction were evaluated based on aerial photographs, vegetation mapping of communities dominated by wetland indicator species per the USACE's National Wetland Plant List (Lichvar et al. 2016), and review of the National Wetlands Inventory's Wetlands Mapper (USFWS 2018b). Although a formal jurisdictional delineation was not conducted to determine exact locations throughout the study area that meet all three wetland parameters for hydrophytic vegetation, hydric soils, and wetland hydrology, the presence of wetlands is presumed based on vegetation communities dominated by wetland indicator species, topography and site conditions observed during the general biological survey, as well as review of topographic maps and 2017 aerial photographs taken after high flow releases. Vegetation communities dominated by wetland indicator species include species that are Obligate (OBL)[1], Facultative Wetland (FACW)[2], or Facultative (FAC)[3]. These include black willow woodland (FACW), sandbar willow woodland (FACW), hardstem bulrush marsh (OBL), common reed marsh (FACW), saltmarsh bulrush marsh (OBL), saltgrass flats (FAC). In addition, three representative soil pits were collected within saltgrass flat communities on-site in the northernmost portion of the study area just south of Lone Pine Narrow Gauge Road; however, due to problematic soils, it was not conclusive whether or not all areas of saltgrass were wetland (wetland data forms are included in the Biological Technical Report prepared by ESA, which is available at Inyo County Water Department). Thus, it should be noted that all communities

1 Obligate – Indicates species that almost always occur in wetlands.
2 Facultative Wetland – Indicates species that usually occur in wetlands, but may occur in non-wetlands.
3 Facultative– Indicates species that occur in wetlands and non-wetlands.

mapped as saltgrass flats are conservatively included as potential USACE/RWQCB jurisdictional wetlands; however, based on site conditions and micro-topography observed during the general biological survey, it is likely that portions of this community are slightly higher in elevation and could be excluded as wetlands with further detailed analysis and/or a jurisdictional delineation.

California Department of Fish and Wildlife Jurisdiction

Areas within CDFW jurisdiction refer to streambeds and associated riparian vegetation and wetlands. Areas identified as potential CDFW jurisdiction are comprised of USACE and RWQCB jurisdiction, which include vegetation communities dominated by wetland indicator species (as detailed above), as well as rubber rabbitbrush – Nevada saltbush scrub (Upland [UPL][4]/Facultative Upland [FACU][5]) and rubber rabbitbrush scrub-saltgrass flats (FACU/FAC) vegetation communities within the floodplain. Upland species almost never occur in wetlands, and FACU species usually occur in non-wetlands but may occur in wetlands. Although rubber rabbitbrush – Nevada saltbush scrub is UPL/FACU, greasewood scrub (FACU) and bush seepweed scrub (OBL) are prevalent as co-dominants in some patches within the shrub layer of this community; therefore, for purposes of this analysis, this community is being considered as riparian habitat under CDFW jurisdiction. Additionally, since rubber rabbitbrush-saltgrass flats is considered FACU/FAC, and because saltgrass flats are a co-dominant component of this community and are considered FAC, for purposes of this analysis, this community is also being considered as riparian habitat under CDFW jurisdiction.

Conversely, allscale scrub (FACU) is not being considered as riparian habitat under CDFW jurisdiction based on the location of this community being primarily outside of the floodplain, as well as the presence of upland desert species (e.g., shadscale, white bursage) found in association with this community.

Plant Species

The study area has been substantially altered from its historic natural state with the diversion of river flow by the City of Los Angeles into the Los Angeles Aqueduct since 1913. Although the LORP was implemented in 2006, which restored riverine and riparian habitat to the Lower Owens River, the current vegetation is indicative of these historical changes and fluctuations in the current hydrology, as well as the soils and hot desert climate of the area. The study area is also actively grazed by cattle. Regardless, the study area is comprised primarily of native species, with only a limited number of non-native species observed during field surveys. A compendium of the plant species observed within the study area is included in the Biological Technical Report prepared by ESA.

Wildlife Species

The upland and riparian communities within the study area provides suitable habitat for a variety of wildlife species. A variety of wildlife species were observed within the study area, including zebra-tailed lizard (*Callisaurus draconoides*), red-winged blackbird (*Agelaius phoeniceus*), common raven (*Corvus corax*), common yellowthroat (*Geothlypis trichas*), northern mockingbird

[4] Upland – Indicates species that almost never occur in wetlands.

[5] Facultative Upland – Indicates species that usually occur in non-wetlands, but may occur in wetlands.

(*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), western kingbird (*Tyrannus verticalis*), and black-tailed jackrabbit (*Lepus californicus*). In addition, tule elk (*Cervus canadensis nannodes*) are known to occur within the study area (Morrison, per. comm. 2018). A compendium of the wildlife species observed within the study area is included in the Biological Technical Report prepared by ESA.

Sensitive Natural Communities

Sensitive natural communities are designated as such by various resource agencies, such as the CDFW, or in local policies and regulations. These communities are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent or distribution, and may be considered threatened enough to warrant some level of protection. Sensitive natural communities include those that are identified in the CDFW *List of California Natural Communities* (CDFW 2018a).

Four sensitive natural communities occur within the study area based on the CDFW *List of California Natural Communities*: black willow woodland, hardstem bulrush marsh, saltmarsh bulrush marsh, and rubber rabbitbrush – Nevada saltbush scrub.

Special-Status Species

"Special-status" species are plants and animals that are listed under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA), as well as species protected under other regulations and species that are considered sufficiently rare or sensitive by the scientific community to be considered rare.

Based on the literature review and field reconnaissance, special-status species were evaluated for their potential to occur within the study area or immediate vicinity, using the following definitions:

Unlikely: The study area or immediate vicinity do not support suitable habitat for a particular species, and therefore the species is unlikely to occur within the study area.

Low Potential: The study area or immediate vicinity only provide low-quality or very limited habitat for a particular species. In addition, the study area may lie outside the known geographic or elevational range for a particular species.

Moderate Potential: The study area or immediate vicinity provide suitable habitat for a particular species. However, the habitat or substrate may be limited or the desired vegetation assemblage or density is less than ideal.

High Potential: The study area or immediate vicinity provides high-quality suitable habitat conditions for a particular species. Additionally, known populations of the species may occur in the study area or immediate vicinity.

Present: The species was observed within the study area during relevant biological surveys or other project visits.

Based on the database search results, a list of potentially occurring special-status species was developed and evaluated for the study area. Special-status species with potential to occur were defined as having a geographic range and habitat requirement similar to those found within the study area or immediate vicinity.

Special-Status Plant Species

Of the 33 special-status plant species considered for their potential to occur within the study area, 26 species were assessed as having low potential to occur because the study area is outside of the known elevation range for these species and/or lacks suitable habitat to support these species. These species include Horn's milk-vetch (*Astragalus hornii* var. *hornii*), Shockley's milk-vetch (*Astragalus serenoi* var. *shockleyi*), pinyon rockcress (*Boechera dispar*), Tulare rockcress (*Boechera tularensis*), scalloped moonwort (*Botrychium crenulatum*), pygmy pussypaws (*Calyptridium pygmaeum*), Kern Plateau bird's-beak (*Cordylanthus eremicus* ssp. *kernensis*), July gold (*Dedeckera eurekensis*), Mt. Whitney draba (*Draba sharsmithii*), Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*), bald daisy (*Erigeron calvus*), Wildrose Canyon buckwheat (*Eriogonum eremicola*), Panamint Mountains buckwheat (*Eriogonum microthecum* var. *panamintense*), rosette cushion cryptantha (*Greeneocharis circumscissa* var. *rosulata*), Sharsmith's stickseed (*Hackelia sharsmithii*), Jaeger's hesperidanthus (*Hesperidanthus jaegeri*), yellow ivesia (*Ivesia arizonica* var. *arizonica*), field ivesia (*Ivesia campestris*), Father Crowley's lupine (*Lupinus padre-crowleyi*), sweet-smelling monardella (*Monardella beneolens*), Inyo rock daisy (*Perityle inyoensis*), Barneby's phacelia (*Phacelia barnebyana*), Letterman's blue grass (*Poa lettermanii*), bog sandwort (*Sabulina stricta*), Dedecker's clover (*Trifolium dedeckerae*), and marsh arrow-grass (*Triglochin palustris*). These species are not discussed further in this analysis.

Nine species have a high, moderate, or moderate/low potential to occur, including Geyer's milk-vetch (*Astragalus geyeri* var. *geyeri*), King's eyelash grass (*Blepharidachne kingii*), Inyo County star-tulip (*Calochortus excavatus*), California satintail (*Imperata brevifolia*), Torrey's blazing star (*Mentzelia torreyi*), Nevada oryctes (*Oryctes nevadensis*), Inyo phacelia (*Phacelia inyoensis*), Parish's popcornflower (*Plagiobothrys parishii*), and Owens Valley checkerbloom (*Sidalcea covillei*). The Biological Technical Report, prepared by ESA, provides details of each of these species, their habitat, and their potential to occur within the study area. Special-status species occurrences from the USFWS and CNDDB occurrences databases within the vicinity of the study area are shown in **Figure 3.3-1**.

Special-Status Wildlife Species

Of the 33 special-status wildlife species considered for their potential to occur in the study area, 11 wildlife species were determined to have a low potential to occur because the study area is outside of the known elevation range for these species and/or lacks suitable habitat to support these species, or these species are not known to occur within the study area based on information provided from CDFW (Buckmaster 2019a). These species include Yosemite toad (*Anaxyrus canorus*), monarch (*Danaus plexippus* pop. 1) (California overwintering population), California wolverine (*Gulo gulo*), Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), fisher (*Pekania pennanti*) (West Coast Distinct Population Segment [DPS]), southern mountain yellow-legged frog (*Rana muscosa*), Sierra Nevada yellow-legged frog (*Rana sierrae*), gray vireo (*Vireo*

vicinior), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and spotted bat (*Euderma maculatum*). These species are not discussed further in this analysis.

A total of 22 species have a high, moderate, or low potential to occur or were observed on-site, including Inyo Mountains slender salamander (*Batrachoseps campi*), Swainson's hawk (*Buteo swainsoni*), Owens sucker (*Catostomus fumeiventris*), western snowy plover (*Charadrius alexandrinus nivosus*), mountain plover (*Charadrius montanus*), northern harrier (*Circus cyaneus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Owens pupfish (*Cyprinodon radiosus*), Panamint alligator lizard (*Elgaria panamintina*), southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-breasted chat (*Icteria virens*), least bittern (*Ixobrychus exilis*), loggerhead shrike (*Lanius ludovicianus*), Owens Valley vole (*Microtus californicus vallicola*), California golden trout (*Oncorhynchus mykiss aguabonita*), Owens speckled dace (*Rhinichthys osculus* ssp. 2), yellow warbler (*Setophaga petechia*), Owens tui chub (*Siphateles bicolor snyderi*), American badger (*Taxidea taxus*), Le Conte's thrasher (*Toxostoma lecontei*), least Bell's vireo (*Vireo bellii pusillus*), and Sierra Nevada red fox (*Vulpes vulpes necator*). The Biological Technical Report, prepared by ESA, provides details of each of these species, their habitat, and their potential to occur within the study area. Special-status species occurrences from the USFWS and CNDDB occurrences databases within the vicinity of the study area are shown in **Figure 3.3-1**.

Critical Habitat

Under the FESA, to the extent feasible, the USFWS is required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. This federally designated habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. These habitat areas require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat designation includes all suitable habitat, occupied or not, essential to the survival and recovery of the species.

The study area does not occur within any USFWS-designated critical habitat areas (USFWS 2018a). The nearest critical habitat is for Sierra Nevada bighorn sheep approximately 7.25 miles to the southwest in the Sierra Nevada range.

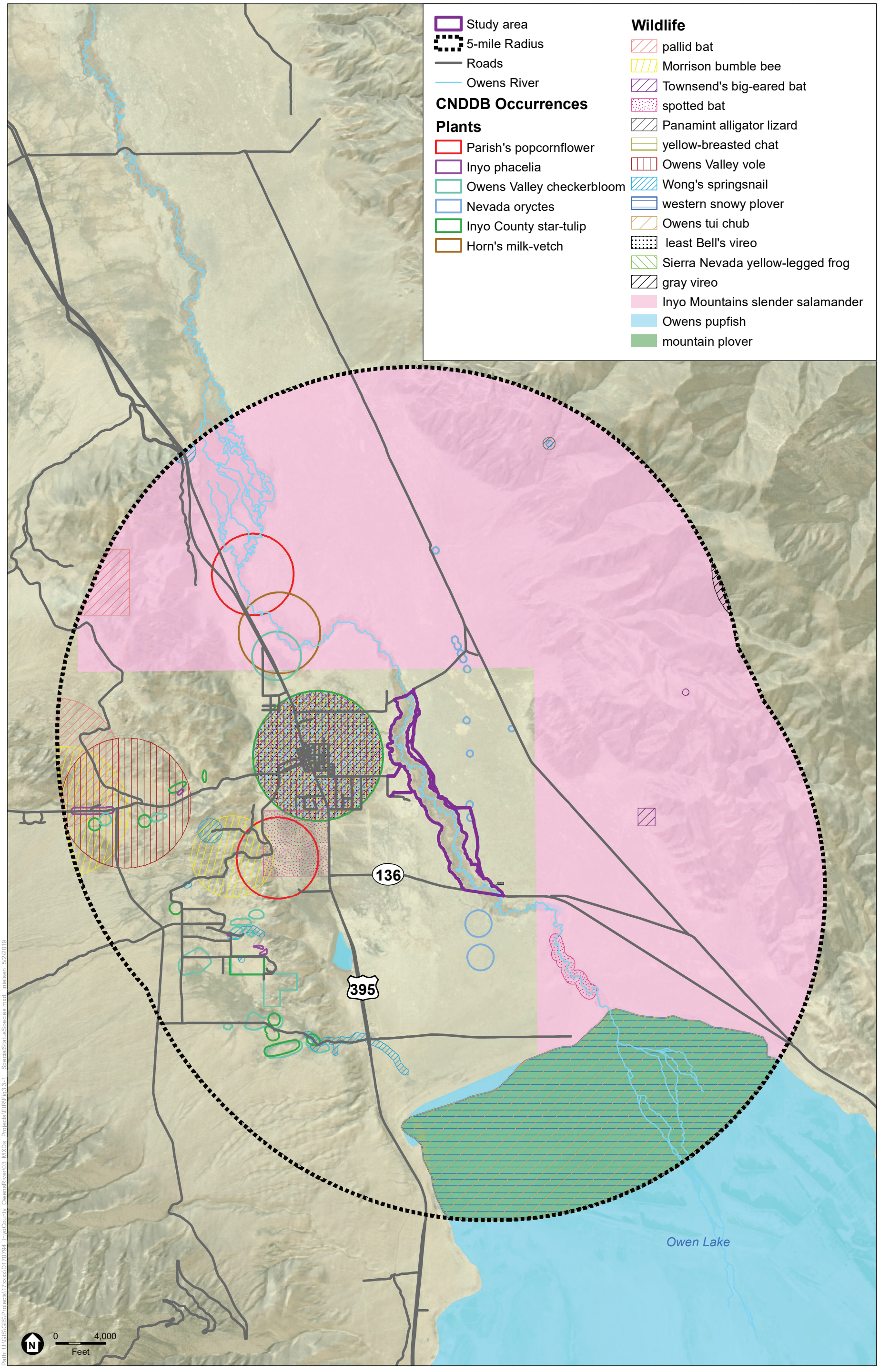
Wildlife Movement

Wildlife movement corridors or habitat linkages are linear habitat features that connect two large blocks of habitat that might otherwise be disconnected from one another. Effective wildlife movement is essential for dispersal, genetic exchange, migration, foraging, and breeding. Functional wildlife movement corridors are especially important in highly fragmented habitat, such as developed or agricultural areas. Wildlife movement corridors are generally used by terrestrial animals, although they may also be important for aquatic species, avian dispersal, and an avenue for genetic exchange in plants. On a regional scale, movement corridors can include bird flyways, such as wetland areas that provide essential habitat to be used as a stopover for several days during migration.

The study area lies within the Owens Valley between the Sierra Nevada range and Inyo Mountains. The study area and surrounding vicinity are within a Natural Landscape Block identified in the California Essential Habitat Connectivity Project (CEHC). CEHC is a CDFW and California Department of Transportation (CalTrans) project that ran a statewide assessment of essential habitat connectivity using spatial analyses and modeling techniques to identify large remaining blocks of intact habitat or natural landscape and model linkages between them that need to be maintained, particularly as corridors for wildlife. The entire Owens River is also mapped as a Potential Riparian Connection in the CEHC.

Additionally, Owens Valley is identified as a Missing Link and Connectivity Choke-Point in the Sierra Nevada Ecoregion in the *Missing Linkages* report (Penrod et al. 2001). Specifically, Map ID# 21 identifies Owens Valley as a link from the Sierra Nevada to the Inyo Mountains as a migration route for wildlife (i.e., east-west link) (as shown on **Figure 3.3-2**). However, Highway 395 is a barrier to regional movement across the valley. The report also identifies river and stream systems lined with cottonwoods and willows within the Sierra Nevada Ecoregion as important habitat for neotropical migratory birds.

In addition, based on tracking data collected by CDFW, tule elk are known to occur within the study area, and this portion of the Owens Valley is important for tule elk calving and migration (Morrison, per. comm. 2018). Although there seems to be patchy and somewhat sparse riparian woodland (i.e., willows) along the river, groups of tule elk have been observed using willow patches for cover (Morrison, per. comm. 2018). Tule elk within the study area are part of the Lone Pine herd that occurs within the Owens Valley. The elk forage on forbs and grasses, and in drier years, rely on browse species (e.g., shadscale, allscale) or spend more time around riparian areas and alfalfa fields where succulent vegetation (e.g., willow) is available in the spring and summer (BLM et al. 1986). Tule elk use various portions of their range in response to seasonal variations in food availability, and shift in response to local conditions influenced by quality of forage, land use by domestic livestock, and human disturbance (CDFW 2018b). Elk are highly social animals, with the herd being the focal point of their existence (CDFW 2018b). The Owens Valley Tule Elk Habitat Management Plan identifies four critical areas that are essential for elk to carry out their normal life processes: rutting areas or summer range, winter range, calving areas, and migration routes. For rutting areas, the herds generally congregate for the rut during August and September each year, where the dominant bulls select a group of cows and defend them from other bulls. The breeding of the cows takes place during this time, and congregated elk require an ample food supply and to be free from disturbances (e.g., from off-road vehicles). For their winter range, elk tend to congregate and feed in areas where browse plants are plentiful as most of the succulent green vegetation is diminished. For calving areas, the winter herd units break up and disperse into smaller groups towards isolated canyon and ravines where they will give bird to their calves. The elk generally use the same area each year. Calving areas are particularly sensitive to certain form of human disturbance (e.g., off-road vehicles). Migration routes are essential for elk to move from one seasonal area to another. A few herds regularly use the same path each year (BLM et al. 1986). Based on tracking data provided by CDFW for three elk individuals during 2015 through 2017, these tule elk have typically utilized the study area for spring and summer (i.e., from late March/mid-April and ranging through anywhere from early July, late August/early September, or late October/November) before moving to wintering areas farther to the north. There is occurrence data from within the study area as early as March 22 to as late as November 30 (CDFW 2018c).

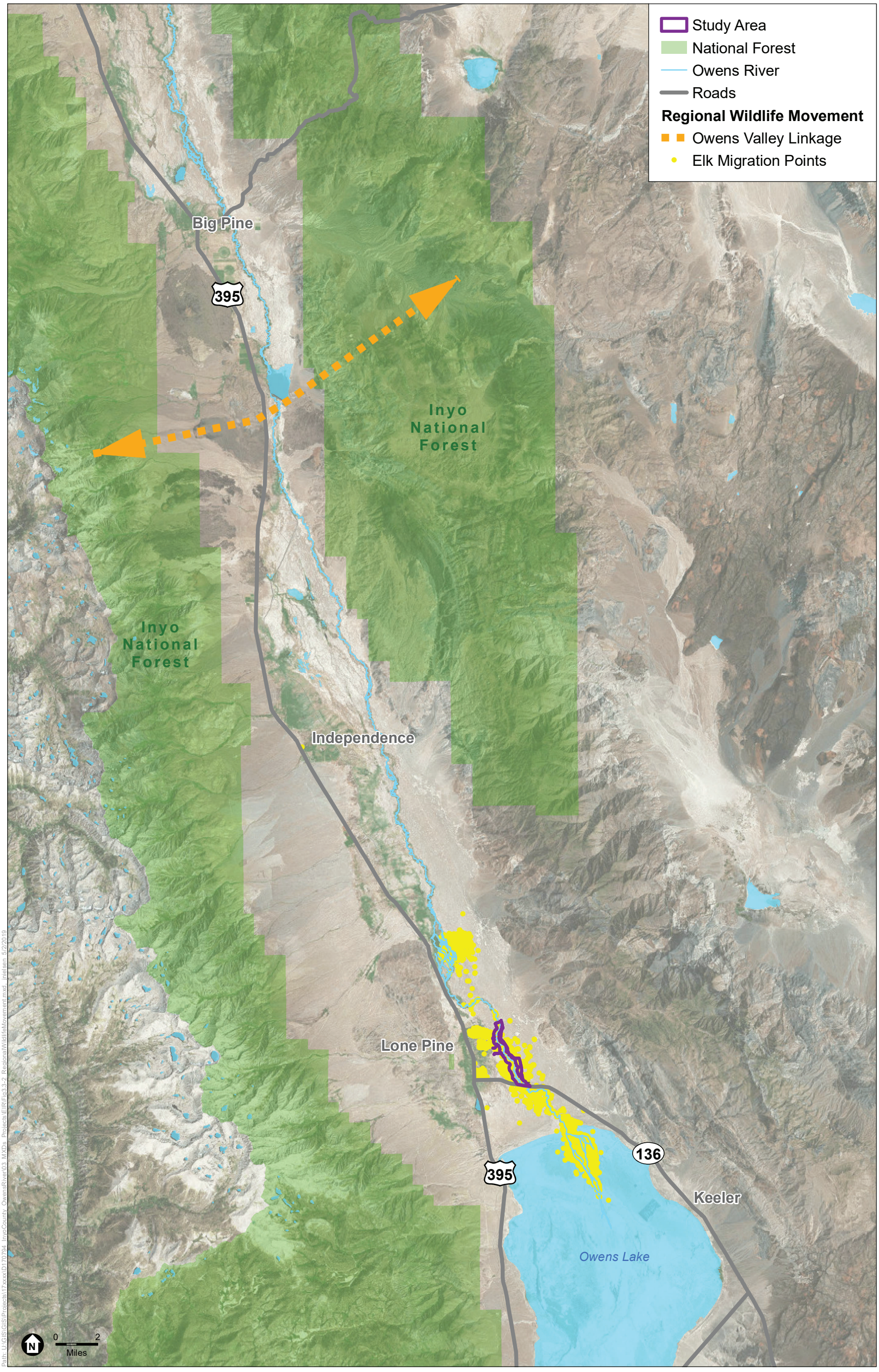


SOURCE: DigitalGlobe 11/3/2017; CNDDB, 2019; ESA, 2019.

Owens River Water Trail

Figure 3.3-1
Special-Status Species Occurrences (CNDDB)

ESA



SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-2
Regional Wildlife Movement

ESA

The Owens River also provides a perennial water source within the arid Owens Valley region that connects montane streams and reservoirs in the north to Owens Lake in the south. The river includes upland and riparian habitat that provides important resources for wildlife, such as foraging habitat, nesting and den sites, and cover, and provides live-in and movement habitat for a variety of invertebrate, fish, herptile, bird, and mammal species. Thus, from a regional perspective, the study area functions as an important wildlife movement corridor.

On a local scale, the study area supports live-in and movement habitat for a number of species (e.g., invertebrate, fish, herptile, bird, and mammal species). Immediately surrounding the study area, the town of Lone Pine is located to the west, and human activity and development within Lone Pine may deter the movement of larger mammals that require larger home range areas and dispersal distances or dense vegetative cover. In addition, Highway 395 and State Route 136 are hazards to wildlife. However, species that are less restricted in movement pathway requirements or are adapted to more developed areas (e.g., raccoon, skunk, coyote, birds) likely move through these areas. Furthermore, surrounding lands throughout and around the study area are undeveloped, contain natural habitats, and are unrestricted for movement. Thus, although some wildlife movement may be deterred by the human activity and development associated with Lone Pine and traffic along the major highways, these barriers to movement would not preclude wildlife from moving through the study area or the surrounding region.

In summary, the study area supports live-in and movement habitat for species on a local scale, and likely functions to facilitate wildlife movement for a number of species on a regional scale.

3.3.2 Regulatory Framework

Federal

Endangered Species Act (USC, Title 16, § 1531 through 1543)

The FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated critical habitat that USFWS determines is required for the survival and recovery of these listed species.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in CCR Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing "take" (to harass, harm, pursue, hunt, wound, kill, etc.) that may occur incidental to an otherwise legal activity.

Section 9 lists those actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at 50 CFR 13 and 17 for species under the jurisdiction of USFWS and 50 CFR 217, 220, and 222 for species under the jurisdiction of NMFS.

Migratory Bird Treaty Act (16 USC 703 through 711)

The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms, or implements, a commitment by the U.S. to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, or kill migratory birds. The law also applies to the removal of nests occupied by migratory birds during the breeding season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

Federal Clean Water Act (33 USC 1251 through 1376)

The USACE regulates "discharge of dredged or fill material" into "waters" of the United States, which includes rivers, streams, ditches, wetlands, ponds, lakes, oxbows, and other types of natural or man-made aquatic systems, identifiable by the water contained in these aquatic systems or by their chemical, physical, and biological indicators, the pollution, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide (33 CFR Part 328, pursuant to provisions of Section 404 of the CWA.

The USACE takes jurisdiction within rivers and streams to the OHWM, determined by erosion, the deposition of vegetation or debris, and changes in vegetation or soil characteristics. However, if there is no federal nexus to navigable waters, these waters are considered "isolated" and thus not subject to their jurisdiction.

The USACE and the Environmental Protection Agency (EPA) have issued a set of guidance documents detailing the process for determining CWA jurisdiction over waters of the United States following the Rapanos decision. The EPA and USACE issued a summary memorandum of the guidance for implementing the Supreme Court's decision in Rapanos that addresses the jurisdiction over waters of the United States under the CWA.

The "significant nexus test" includes consideration of hydrologic and ecologic factors. The significant nexus test would take into account physical indicators of flow (evidence of an OHWM), if a hydrologic connection to a "traditional navigable water" (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or

insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary drainage to determine if it significantly affects the chemical, physical and biological integrity of the downstream TNW.

State

California Endangered Species Act (California Fish and Game Code § 2050 et seq.)

The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project operator would have to apply for a take permit under Section 2081(b).

California State Fish and Game Code § 1600 et seq.

Under these sections of the California Fish and Game Code, the project operator is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

California State Fish and Game Code §§ 2080 and 2081

Section 2080 of the California Fish and Game Code states that "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the code, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or

candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

California State Fish and Game Code §§ 3503 and 3503.5

Under these sections of the California Fish and Game Code, the project operator is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey; the taking or possessing of any migratory nongame bird as designated in the MBTA; the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or nongame birds protected by the MBTA; or the taking of any nongame bird pursuant to California Fish and Game Code Section 3800.

California Environmental Quality Act Guidelines, § 15380

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines § 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFW to be significant resources and fall under the State CEQA Guidelines for addressing impacts. Local planning documents such as General Plans often identify these resources as well.

Native Plant Protection Act (California Fish and Game Code §§ 1900 through 1913)

California's NPPA requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The project operator is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Water Quality Control Act (Porter-Cologne California Water Code Section 13260)

The State Water Resources Control Board (SWRCB) and the RWQCB (together "Boards") are the principal State agencies with primary responsibility for the coordination and control of water quality. The Boards regulate activities pursuant to Section 401(a)(1) of the federal CWA as well as the Porter Cologne Water Quality Control Act (Porter-Cologne) (Water Code Section 13260). Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA.

In the Porter-Cologne, the Legislature declared that the "State must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the State from degradation..." (California Water Code Section 13000). Porter-Cologne grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the State. It is important to note that enforcement of the State's water quality requirements is not solely the purview of the Boards and their staff. Other agencies (e.g., CDFW) have the ability to enforce certain water quality provisions in state law.

Local

Inyo County General Plan

Inyo County's General Plan includes a Conservation Element, which addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits, and an Open Space Element, which details plans and measures for preserving open space for natural resources, the managed production of resources, outdoor recreation, public health and safety, and the identification of intensive agriculture and irrigated pasturelands. Specific goals within the Conservation and Open Space Elements include the following:

Biological Resources

Goal BIO-1 – Maintain and enhance biological diversity and healthy ecosystems throughout the County.

Policy BIO-1.1 Regulatory Compliance - The County shall review development proposals to determine impacts to sensitive natural communities, of both local and regional concern, and special-status species. Appropriate mitigation measures will be incorporated into each project, as necessary.

Policy BIO-1.2 Preservation of Riparian Habitat and Wetlands - Important riparian areas and wetlands, as identified by the County, shall be preserved and protected for biological resource value.

Policy BIO-1.3 Restoration of Biodiversity - Encourage the restoration of degraded biological communities.

Policy BIO-1.4 Develop Outside of Habitat Areas - Work with regulatory agencies and private developers to direct development into less significant habitat areas. Discourage urban development in areas containing sensitive natural communities or known to contain special-status species.

Policy BIO-1.5 Wildlife Corridors - The County shall work to preserve and protect existing wildlife corridors where appropriate.

Policy BIO-1.6 Invasive Weed Species - Avoid activities that will promote the spread of invasive weeds in the County.

Policy BIO-1.7 Owens River Restoration - The County will work with the LADWP and regulatory agencies to complete the restoration of habitat values along the historic Owens River channel as mitigation for degradation done with water export activities. This policy shall apply to the portion of the Owens River identified as the Lower Owens River Project.

Goal BIO-2 – Provide a balanced approach to resource protection and recreational use of the natural environment.

Policy BIO-2.2 Appropriate Access for Recreation - Encourage appropriate access to resource-managed lands.

Policy BIO-2.4 Nature as Education - Provide and support passive recreational opportunities and interpretive education in the natural environment.

County of Inyo/City of Los Angeles Department of Water and Power Long Term Water Agreement – Lower Owens River Project

Under the Inyo/Los Angeles Long Term Water Agreement, the County and LADWP committed to rewater the full 62-mile-long reach of the Owens River as part of the LORP. The LORP was identified in a 1991 EIR as mitigation for impacts related to groundwater pumping by LADWP from 1970 to 1990. The LORP is implemented through a joint effort by LADWP and the County. The goal of the LORP is the establishment of a healthy, functioning Lower Owens River riverine-riparian ecosystem, and the establishment of healthy, functioning ecosystems in the other physical features of the LORP, for the benefit of biodiversity and Threatened and Endangered Species, while providing for the continuation of sustainable uses including recreation, livestock grazing, agriculture and other activities. The LORP is guided by five objectives, which include:

1. Establishment and maintenance of diverse riverine, riparian, and wetland habitats in a healthy ecological condition;
2. Compliance with state and federal laws (including regulations adopted pursuant to such laws) that protect Threatened and Endangered Species;
3. Management consistent with applicable water quality laws, standards, and objectives;
4. Control of deleterious species whose presence within the LORP area interferes with the achievement of the goals of the LORP; and
5. Management of livestock.

In order to achieve the first objective, the LORP includes four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area with seasonal flooding and land management to benefit wetlands and waterfowl; and (4) maintaining several off-river lakes and ponds.

3.3.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to biological resources in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant biological resources impact would occur if the project would:

BIO-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulation, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

BIO-3 Have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede with the use of native wildlife nursery sites.

BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

BIO-6 Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Methodology

This section describes the potential effects of the proposed project on biological resources that may occur as a result of project implementation, including net ecological benefits. Temporary, permanent, direct, and/or indirect effects to biological resources may occur as a result of project implementation, as defined below:

- **Direct Effects:** Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct effect. Examples include loss of individual species and/or their associated plant communities, diversion of surface water flows, and encroachment into wetlands. Under the FESA, direct effects are defined as the

immediate effects of a project on a species or its habitat, including construction noise disturbance, sedimentation, or habitat loss.

- **Indirect Effects:** Biological resources may also be affected in an indirect manner as a result of project-related activities. Under the FESA, indirect effects are defined as those effects that are caused by, or would result from, a proposed project but occur later in time and are reasonably certain to occur [50 C.F.R. §402-02]. An example of indirect effects may include irrigation runoff from a developed area into surrounding natural vegetation. Indirect effects could also include increased wildfire frequency as a result of power line failures.
- **Temporary Effects:** Any effects to biological resources that are considered reversible can be viewed as temporary. Examples include the generation of fugitive dust during construction activities.
- **Permanent Effects:** All effects that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area with native vegetation, such that the native vegetation is permanently removed and replaced with a developed structure.

A project is generally considered to have a significant effect if it proposes or results in any of the conditions described in the significance thresholds discussed below (in italics), absent specific evidence to the contrary. Conversely, if a project does not propose or result in any of the following conditions, it would generally not be considered to have a significant effect on biological resources, absent specific evidence of such an effect. These significance thresholds are taken from Appendix G of the State CEQA Guidelines.

3.3.4 Project Impacts

Special-Status Species

Threshold BIO-1: The project would result in a significant impact if the project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulation, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Statement BIO-1: *The proposed project has the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulation, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. However, implementation of Mitigation Measures BIO-1 through BIO-3 would reduce impacts to special-status species to a less than significant level.*

The study area is not within any USFWS-designated Critical Habitat for any special-status plant or wildlife species.

Nine special-status plant species have a high, moderate, or moderate/low potential to occur, including Geyer's milk-vetch, King's eyelash grass, Inyo County star-tulip, California satintail, Torrey's blazing star, Nevada oryctes, Inyo phacelia, Parish's popcornflower, and Owens Valley checkerbloom. These species were not observed on-site during the general biological survey conducted by ESA in June 2018; however, the general biological survey did not thoroughly cover

all of the potentially suitable habitats for these species. Thus, focused surveys during the appropriate blooming period for these species should be conducted within the project site prior to project implementation.

ESA ran hydraulic simulations based on the "Lower Owens River Project Hydraulic Model" produced for LADWP on May 4, 2012 to model and compare baseline water surface elevations (WSE) of the currently existing conditions within the study area with the projected WSEs after implementation of the proposed project (see Appendix B-1). Model results show a decrease in average WSE relative to the existing conditions with the removal of vegetation and channel depth modifications. The simulations used two representative[6] plots: the Plot 4 model covered approximately 2.2 miles of river (extending from 0.2 miles downstream of the Lone Pine Narrow Gauge Road Bridge at River Mile [RM] 43.85 to RM 45.8), and the Plot 5 model covered approximately 2.5 miles of river (extending from RM 46.6 to 0.1 miles upstream of the Keeler Railroad Bridge located at RM 48.7). Throughout the study area, the channel is characterized by areas of open water bordered by tules separated by short sections of channel that are either bridged or entirely occluded by tules, with large wood debris in some places. It was noted that Plot 4 contained a "marsh region" where there was not an obvious main channel, and the single channel split into multiple flow paths with indistinct and discontinuous channels, acting as a large marsh extending across most of the floodplain. Additionally, debris jams or beaver dams were observed in the open water areas within the marsh, further contributing to shallow inundation over the floodplain. At the downstream end of this area, a large drop in the WSE was observed where the shallow floodplain flows rejoin the channel.

Based on the hydraulic simulations, with the implementation of the proposed project, the decrease in WSE would be more pronounced in Plot 4 than Plot 5 due to the backwater associated with the marsh region in Plot 4. The simulations predicted an average change of -3.1 feet and maximum change of -5.2 feet in WSE in Plot 4, and an average change of -1.2 feet and maximum change of -2.5 feet in WSE in Plot 5. In addition, the simulations predicted a minimum wetted width (i.e., inundated width of the channel)[7] of 15.4 feet (as compared to 48.0 feet in the baseline condition) and an average wetted width of 55.6 feet (as compared to 182.9 feet in the baseline condition) in WSE in Plot 4, and a minimum wetted width of 21.4 feet (as compared to 34.5 feet in the baseline condition) and an average wetted width of 47.0 feet (as compared to 59.2 feet in the baseline condition) in WSE in Plot 5. The decrease in wetted width for design scenarios was more pronounced in Plot 4, since removing occlusions or excavating a uniform channel through the marsh region results in a substantial reduction in wetted width. The hydraulic simulations suggest that channel clearing, widening, or excavation will increase conveyance and decrease the water depth over the project area.

However, as detailed in Section 3.7 of this EIR, the stretch of the Owens River from south of the Big Pine area all the way to Owens Lake is a gaining stream year-round. This means that groundwater discharged into the river is supporting its flow for the entire length down to Owens Lake. This gaining stream condition includes the proposed project area, which has never been observed to go dry. The project area is located towards the lower elevation southernmost portion

6 Plot 4 and Plot 5 are non-contiguous and do not cover the entire project area.

7 Wetted width = open water + inundated areas (even if vegetated, such as with tules).

of Owens Valley. Consequently, the floodplain in the project area is less sensitive to river water surface elevation because groundwater levels, and the floodplain vegetation it supports, are not entirely dependent on the river's surface water flow within the project area. Although the removal of occlusions may result in a drop in surface water elevation, it is likely to have a limited effect on the surrounding vegetation since the proposed project area is within a reach of the Owens River that is supported by a gaining stream fed by groundwater. Thus, if any special-status plant species occur on-site, impacts would be less than significant, and no mitigation would be required.

If special-status plant species are present within the project site, permanent impacts from installation of the boat launch and take-out facilities, and/or temporary impacts from trampling associated with access routes, staging areas, and/or spoils locations, could be significant if these impacts threaten regional populations of these species. In addition, the study area is relatively free of invasive, non-native weeds; however, there were a few observations of trace amounts of tamarisk within the study area. Perennial pepperweed (*Lepidium latifolium*) has not been found in the study area, but it does occur farther upstream of the study area within the LORP. Both perennial pepperweed and tamarisk are non-native species that are a concern within the LORP region, and are actively being treated/removed by LADWP and the County (County of Inyo Water Department 2019). Although floodplain disturbance has the potential to encourage weeds, disturbances will primarily be from vegetation removal within the channel or temporarily crushing vegetation for access and/or stockpiling spoils, rather than creating open areas of disturbed soil where vegetation does not exist and new weedy species have an opportunity to establish. In addition, for the spoils piles, the emergent vegetation would be placed on top of the muck and mineral soils to deter the establishment of weedy species to the extent practicable. Furthermore, the study area has few invasive, non-native weeds present that could have the potential to spread. However, the introduction of noxious weeds from outside sources (e.g., construction equipment coming from other areas) could be significant if special-status plant species are present and impacts from competition with noxious weeds threaten regional populations of these species. Implementation of mitigation measure BIO-1 would reduce impacts to a less than significant level.

A total of 25 special-status wildlife species were analyzed for their potential to occur within the study area.

Five special-status fish species (Owens sucker, Owens pupfish, California golden trout, Owens speckled dace, and Owens tui chub) were determined to have a low potential to occur. While the study area supports suitable or marginally suitable habitat, the study area is outside of the known distribution for these species. For the federal and state endangered species, Owens pupfish and Owens tui chub, sanctuaries and refuge sites have been created in order to improve and reestablish their populations. The sanctuaries and refuge sites connected to the Owens River are all located at least 45 miles north from the study area. One refuge is located 11.5 miles away, but lacks a surface water connection with the Owens River. While it is entirely possible for one of the fish species to swim downstream into the study area, it is not expected. Based on a personal conversation with Nick Buckmaster (Environmental Scientist with CDFW's Bishop Field Office) during a project site visit in March 2018, the potential for Owens sucker, Owens pupfish, Owens speckled dace, and Owens tui chub is low within the study area (Buckmaster, pers. comm. 2018). These species are not discussed further in this analysis.

One special-status amphibian species (Inyo Mountains slender salamander) and one special-status reptile species (Panamint alligator lizard) were also determined to have a low potential to occur due to lack of suitable habitat on-site and because the study area was outside of the known distribution for these species. These species are not discussed further in this analysis.

Five special-status avian species (western snowy plover, mountain plover, western yellow-billed cuckoo, southwestern willow flycatcher, least Bell's vireo) were determined to have a low potential to occur due to marginally suitable habitat or the lack of suitable habitat on-site and/or because the study area was outside of the known distribution for these species. These species are not discussed further in this analysis. In addition, four special-status avian species (yellow-breasted chat [SC[8]], loggerhead shrike [BCC[9]/SC], yellow warbler [BCC/SC], and Le Conte's thrasher [BCC/SC]) were documented as observed on-site; one special-status avian species (northern harrier [SC]) has a high potential to occur; and two special-status avian species (Swainson's hawk [BCC/ST[10]] and least bittern [BCC/SC]) have a moderate potential to occur within the study area. The proposed project would permanently impact 3.8 acres of natural communities (including 0.1 acre of black willow woodland, 3.1 acres of hardstem bulrush marsh, 0.1 acre of saltmarsh bulrush marsh, 0.4 acre of saltgrass flats, and 0.1 acre of allscale scrub) due to the boat launch and take-out facilities as well as the removal of occlusions to create and maintain the water trail, and temporarily impact 37.0 acres of natural communities (including 0.6 acre of black willow woodland, 0.1 acre of sandbar willow woodland, 10.1 acres of hardstem bulrush marsh, 0.2 acre of common reed marsh, 14.7 acres of saltmarsh bulrush marsh, 6.6 acres of saltgrass flats, 0.5 acre of rubber rabbitbrush scrub – Nevada saltbush scrub, 0.3 acre of rubber rabbitbrush scrub – saltgrass flats, and 3.9 acres of allscale scrub) due to access routes and staging areas for construction, and spoils generated from the removed occlusions. These natural communities provide habitat for the above-mentioned special-status avian species. With the available 621.8 acres of natural areas (i.e., 641.4 acres of avoided areas, minus 19.6 acres of disturbed) within the 685.2-acre study area that will be avoided by the proposed project, as well as natural areas within the surrounding vicinity, potential impacts to foraging and/or nesting habitat for these species are not expected to threaten regional populations. Direct impacts would also be avoided as these species are mobile and would be expected to fly away from the construction area, if present. Furthermore, project construction will occur outside of nesting season (as referenced in project description), and compliance with the MBTA and FGC during project construction and throughout 20 years of maintenance will also ensure no impacts to nests will occur. Thus, any potential direct impacts to these species are considered less than significant. However, if construction and maintenance work cannot be scheduled outside of nesting season, impacts to nesting special-status bird species, would be potentially significant. Implementation of mitigation measure BIO-2 would reduce impacts to a less than significant level.

One special-status mammal species (Sierra Nevada red fox) was determined to have a low potential to occur due to the study area being outside of the known distribution for this species; this species is not discussed further in this analysis. In addition, three special-status mammal species (Owens Valley vole and American badger [all are SC]) have a moderate potential to occur

8 CDFW Species of Special Concern
9 USFWS Bird of Conservation Concern
10 State Threatened

within the study area. As mentioned above, the proposed project would permanently impact 3.8 acres of natural communities and temporarily impact 37.0 acres of natural communities, which provide habitat for these special-status mammal species. With the available 621.8 acres of natural areas within the study area that will be avoided by the proposed project, as well as natural areas within the surrounding vicinity, potential impacts are not expected to threaten regional populations of these species. Direct impacts would also be avoided as these species are mobile and would be expected to move away from the construction area, if present. Thus, any potential direct impacts to these species are considered less than significant.

In addition, public use of the ORWT and the resulting increased human activity within the area could potentially disturb special-status plant and wildlife species, if present. Increased public use could indirectly impact special-status species by trampling plants (e.g., from off-trail hiking), or deterring wildlife from using an area (e.g., due to increased noise and human presence, off-leash dogs could predate on wildlife, increased trash could attract nuisance wildlife predators/ competitors to the area). Thus, potential indirect impacts to special-status species would be potentially significant. Implementation of mitigation measure BIO-3 would reduce impacts to a less than significant level.

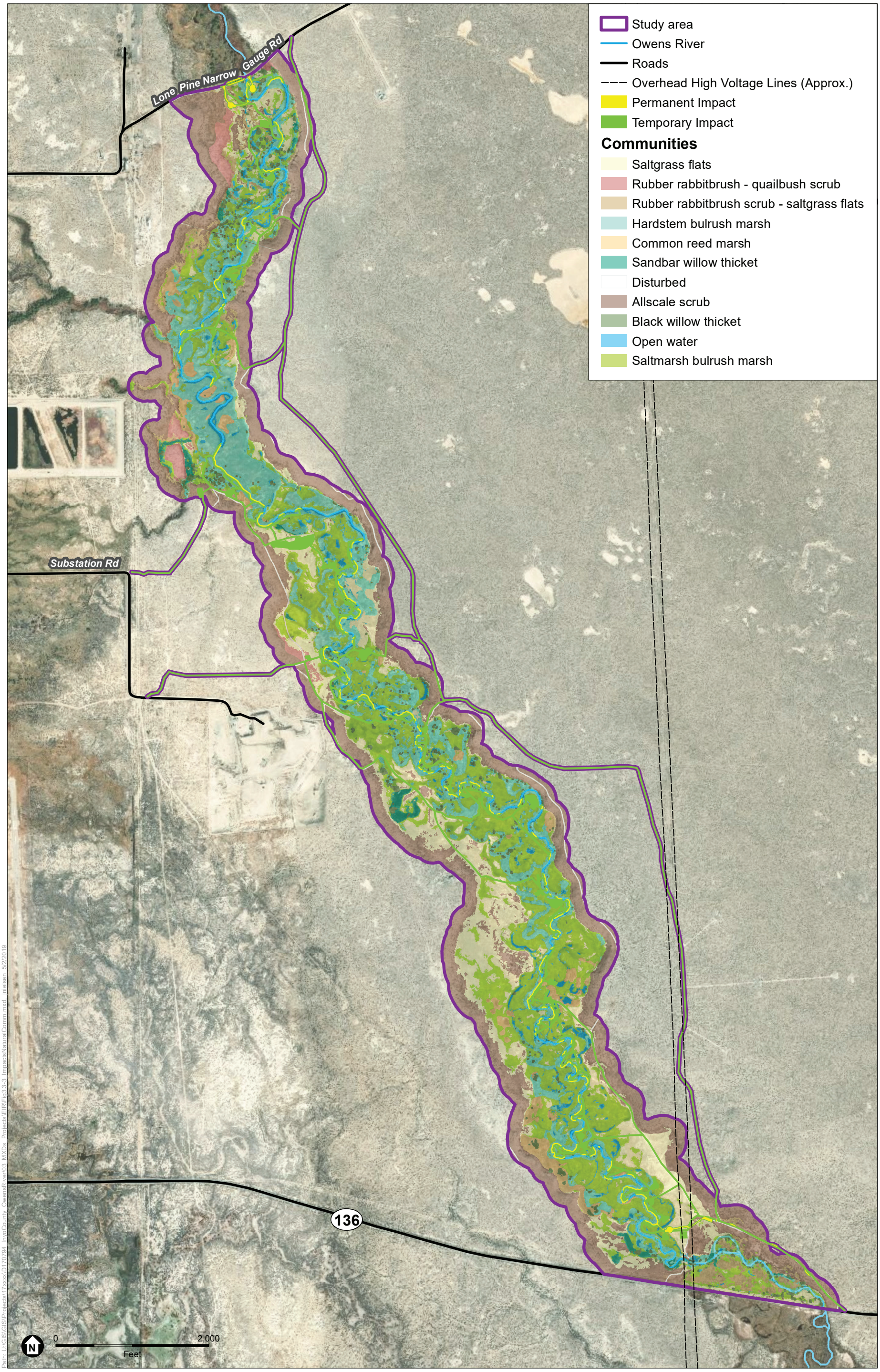
Sensitive Natural Communities

Threshold Bio-2: The project would result in a significant impact if the project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Statement BIO-2: *The proposed project has the potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. However, implementation of Mitigation Measures BIO-4 and BIO-5 would reduce impacts to sensitive natural communities and riparian habitat to a less than significant level.*

Four sensitive natural communities occur within the study area: black willow woodland, hardstem bulrush marsh, saltmarsh bulrush marsh, and rubber rabbitbrush – Nevada saltbush scrub. However, because hardstem bulrush marsh, saltmarsh bulrush marsh, and rubber rabbitbrush – Nevada saltbush scrub are regionally common and widely distributed, they are not considered a vulnerable community in the region, which was confirmed by CDFW (Buckmaster 2019b, Banks and Moyer 2019); therefore, impacts are not considered significant. However, any impacts to black willow woodland would be significant, since this community is in decline locally and considered a vulnerable community.

The proposed project would permanently impact 0.1 acre and temporarily impact 0.6 acre of black willow woodland. **Table 3.3-3** summarizes the permanent and temporary impacts on sensitive natural communities from the proposed project (shown in **Figure 3.3-3a-c**). The project would avoid 16.3 acres of black willow woodland.

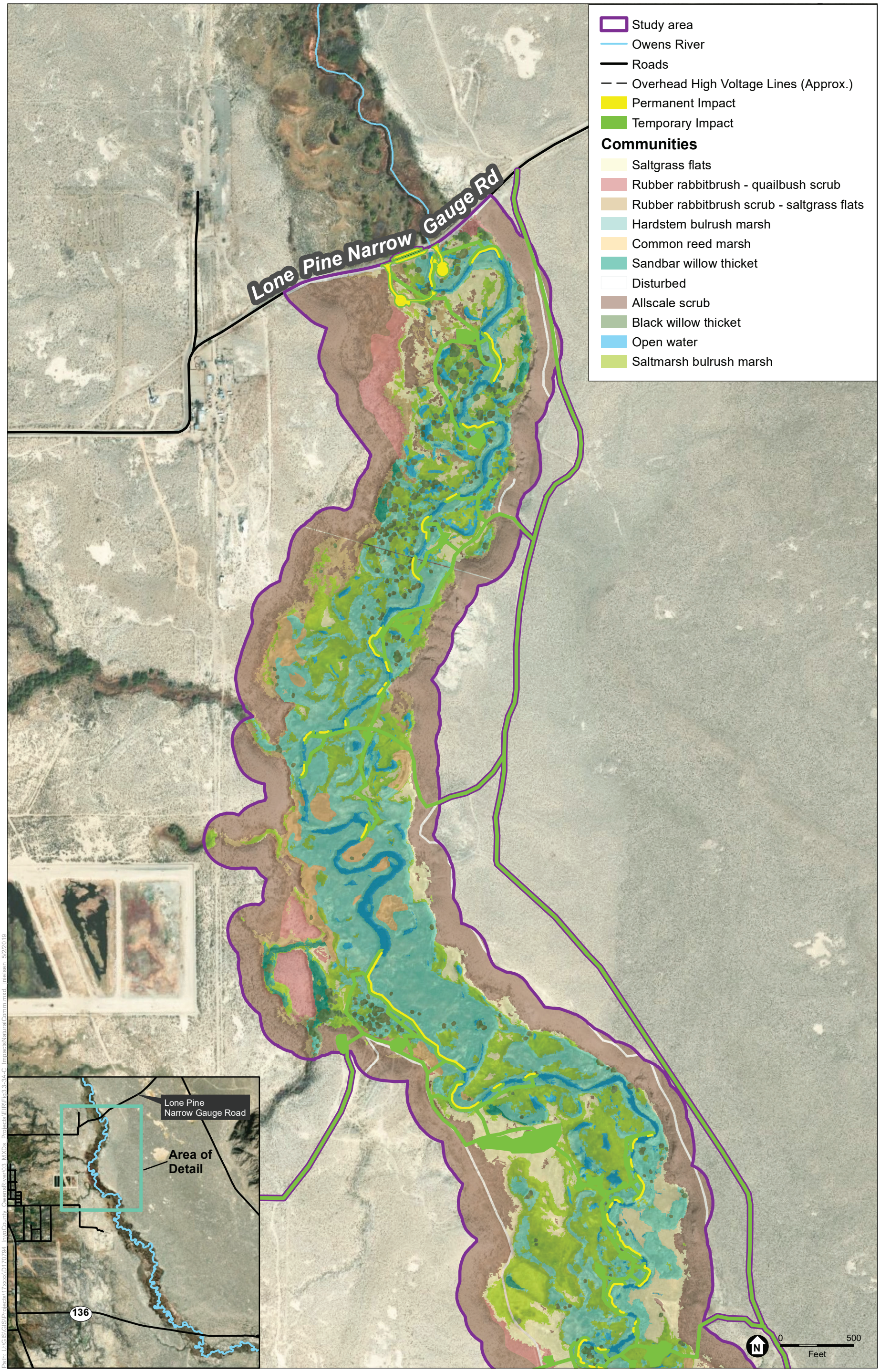


SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-3
Impacts to Natural Communities

ESA

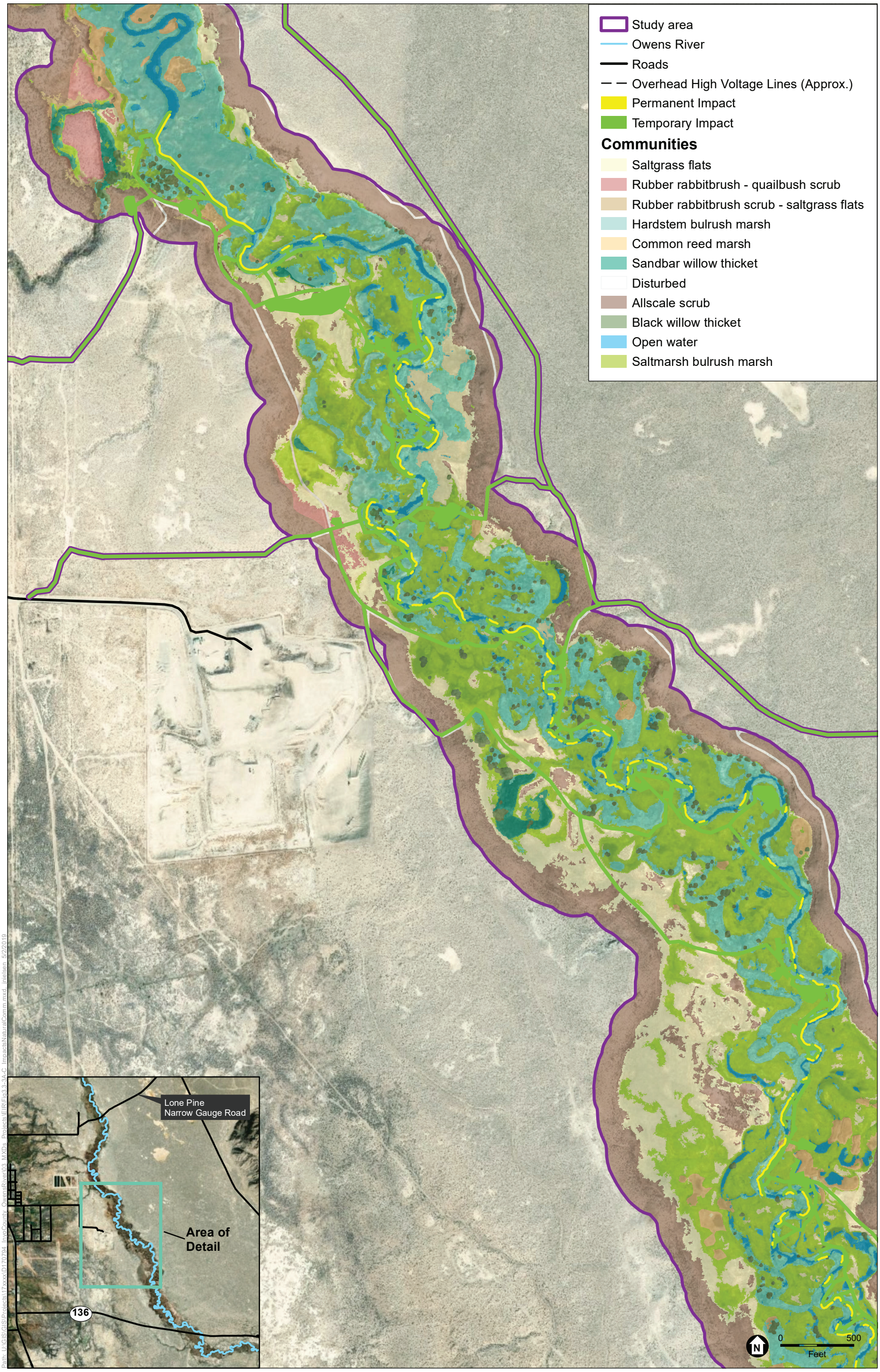


SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-3A
Impacts to Natural Communities

ESA



SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-3B
Impacts to Natural Communities

ESA

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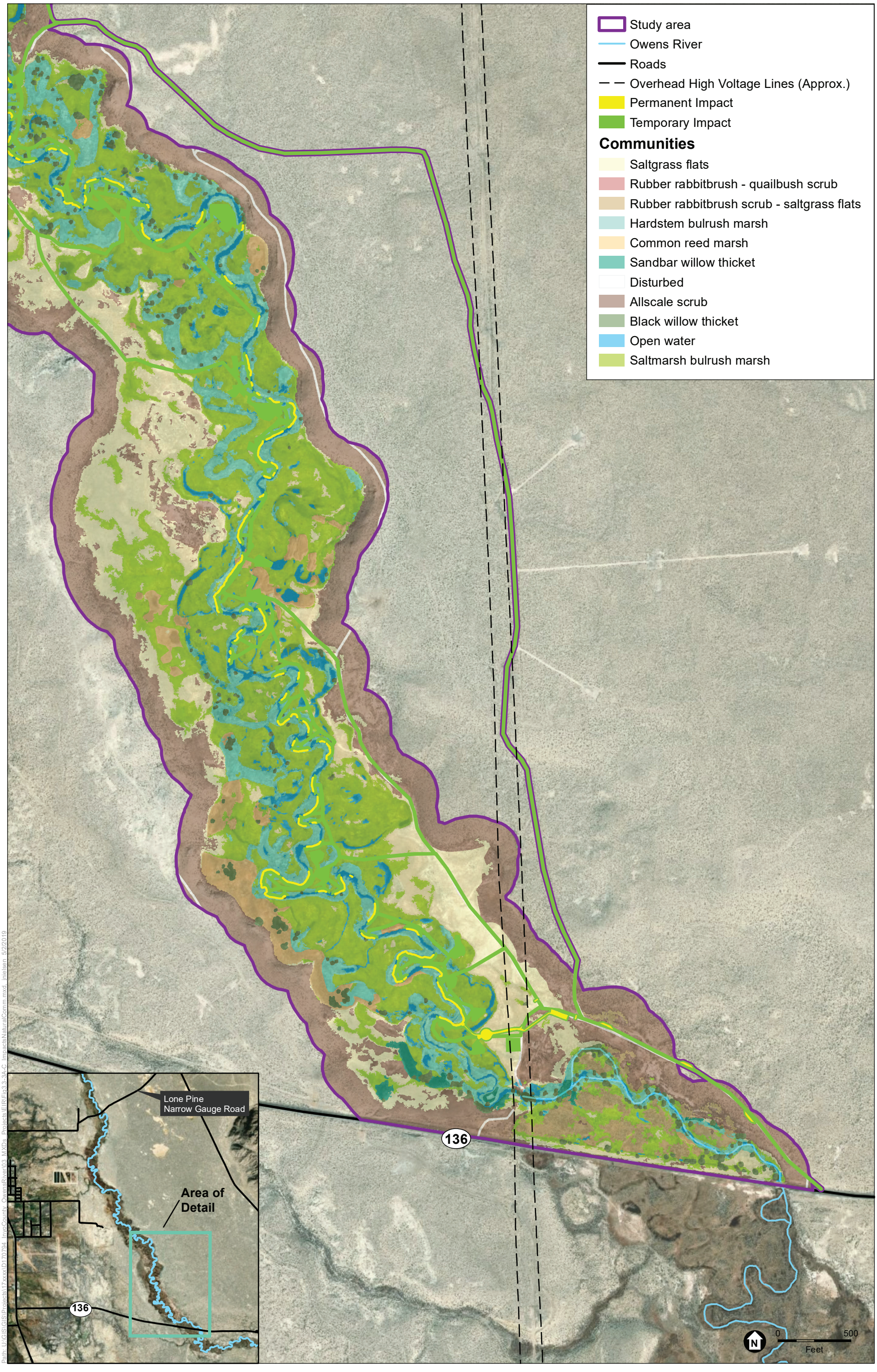


SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-3C
Impacts to Natural Communities

ESA

within the study area. Temporary impacts would consist of access routes and staging areas for construction, and spoils generated from the removed occlusions. It is anticipated access routes would mostly follow already existing dirt roads, or will temporarily crush vegetation for a short duration where dirt roads do not exist for equipment to access areas where excavation must occur. Thus, it is expected that any crushed vegetation would reestablish and regrow naturally. It is also anticipated that spoils will breakdown (e.g., through natural decomposition; trampling, bedding, and grazing by cattle; natural recruitment of saltgrass and other plants on top of and through the spoils). Therefore, temporary impacts from the access routes, staging areas, and spoils are expected to passively recover and reestablish naturally to pre-project conditions. Permanent impacts to sensitive natural communities would result from installation of the boat launch and take-out facilities, and the removal of occlusions to create and maintain the water trail. Implementation of mitigation measure BIO-4 would reduce impacts to sensitive natural communities (e.g., black willow woodland) to a less than significant level.

In addition, the majority of the study area supports riparian habitat, which is considered potential CDFW jurisdictional streambed and associated riparian habitat. The proposed project would permanently impact 5.7 acres of potential CDFW jurisdictional streambed and associated riparian habitat, of which 5.2 acres would be turned into open water from in-channel occlusion removal and would therefore still be CDFW jurisdictional streambed, and temporarily impact 35.5 acres of CDFW jurisdictional streambed and associated riparian habitat. **Table 3.3-4** summarizes the permanent and temporary impacts on potential CDFW jurisdictional riparian habitat from the proposed project (shown in **Figure 3.3-4a-c**). The proposed project would also provide some benefits. As reported in the Draft LORP 2018 Annual Report, the LORP is aggrading (i.e., increasing in land elevation due to deposition of sediment) and "the river channel is expected to become more occluded and the extent of marsh will increase at the expense of open water. As the LORP continues to aggrade, its functional character becomes more like an elongated marsh and less like a riverine system" (LADWP and Inyo County 2018a). Thus, creation of the water trail will help to maintain the open water within the river channel. The project would avoid 428.9 acres of CDFW jurisdictional streambed and associated riparian habitat within the study area. As mentioned above, temporary impacts would consist of access routes and staging areas for construction, and spoils generated from the removed occlusions, and access routes are anticipated to mostly follow already existing dirt roads, or would temporarily crush vegetation for a short duration where dirt roads do not exist. Thus, it is expected that any crushed vegetation would reestablish and regrow naturally. A large portion of the temporary impacts will be to saltgrass flats, which is very durable and expected to reestablish easily (County of Inyo Water Department 2019).[11] It is also anticipated that spoils will breakdown (e.g., through natural decomposition; trampling, bedding, and grazing by cattle; natural recruitment of saltgrass and other plants on top of and through the spoils). Therefore, temporary impacts from the access routes, staging areas, and spoils are expected to passively recover and reestablish naturally to pre-project conditions. Permanent impacts to potentially jurisdictional riparian habitat would consist of the boat launch and take-out facilities, and the removal of occlusions to create and maintain the water trail. Due

[11] Based on previous observation by County of Inyo Water Department, removed tules piled along the river banks are typically eaten by cattle or trampled, and tend to dry up and breakdown quickly. Additionally, saltgrass was observed to quickly recolonize areas where tules were piled up to 8 feet high, and saltgrass completely grew over those areas within two years.

to the management benefits of removing common and widely distributed tules within the LORP area, CDFW does not consider removal of occlusions as significant, and no mitigation is warranted (Banks and Moyer 2019). However, any potential permanent impacts to CDFW jurisdictional riparian habitat from the boat launch and take-out facilities would be significant. Implementation of mitigation measure BIO-5 would reduce impacts to a less than significant level.

TABLE 3.3-3
IMPACTS TO NATURAL COMMUNITIES

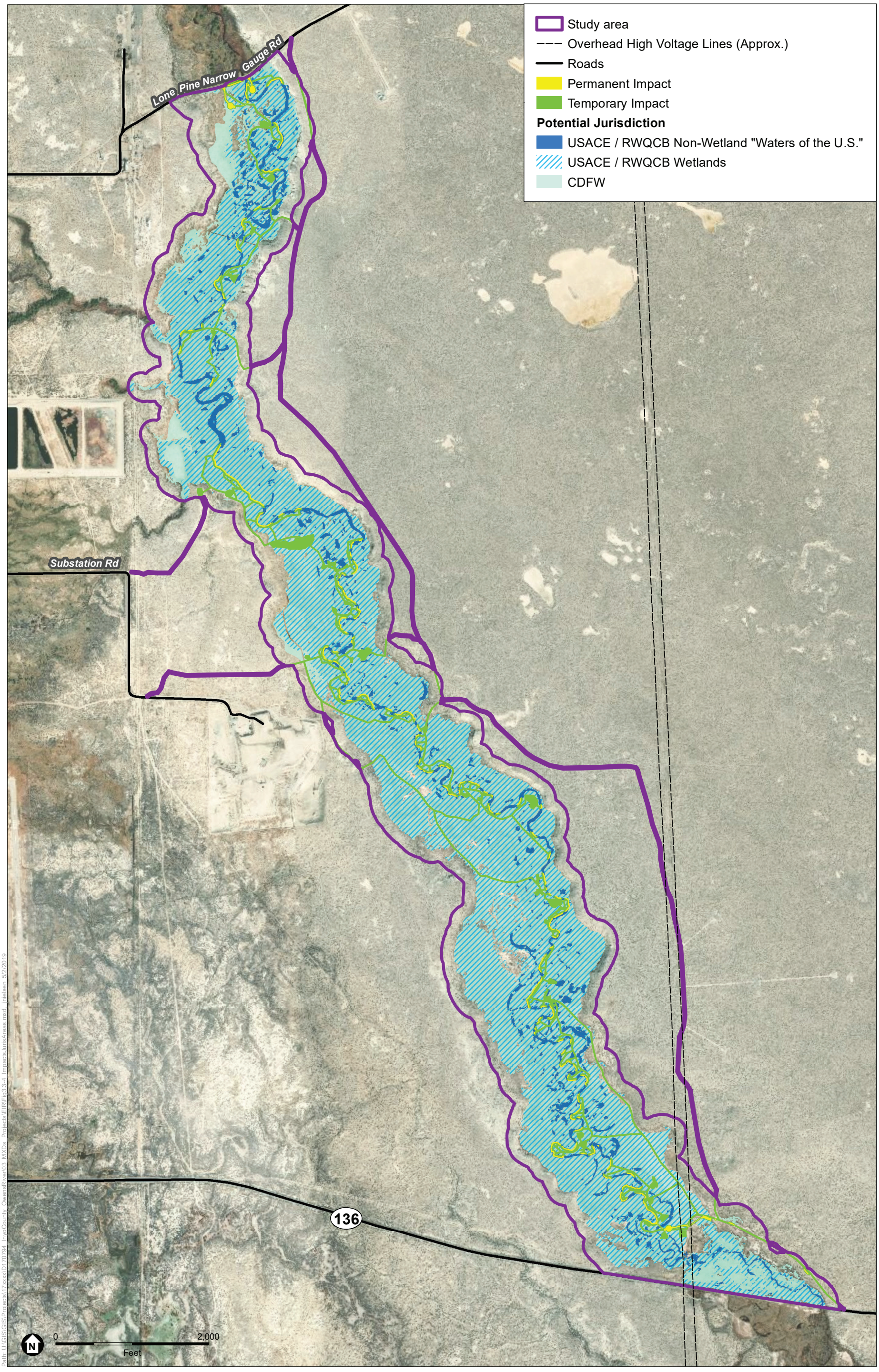
Natural Community	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Total Impacts (Acres)	Avoided (Acres)
Black Willow Woodland* (Riparian Forest)	17.0	0.1 (0.1)***	0.6	0.7	16.3
Sandbar Willow Woodland (Riparian Shrub)	6.1	-	0.1	0.1	6.0
Hardstem Bulrush Marsh* (Marsh)	117.6	3.1 (3.0)***	10.1	13.2	104.4
Common Reed Marsh (Reedgrass or Reed)	17.3	-	0.2	0.2	17.1
Saltmarsh Bulrush Marsh* (Wet Meadow)	175.3	0.1	14.7	14.8	160.5
Saltgrass Flats (Alkali Meadow)	86.4	0.4	6.6	7.0	79.4
Rubber Rabbitbrush – Nevada Saltbush Scrub* (Alkali Scrub)	8.9	-	0.5	0.5	8.4
Rubber Rabbitbrush Scrub – Saltgrass Flats (Alkali Scrub/Meadow)	16.1	-	0.3	0.3	15.8
Allscale Scrub (Upland Scrub)	191.7	0.1	3.9	4.0	187.7
Open Water (Water)	26.2	2.4**(2.0)***	2.4**	4.8**	26.2**
Disturbed (Road)	22.6	0.1	2.9	3.0	19.6
Total	**685.2**	**3.9****	**39.9****	**43.8****	**641.4****

* Asterisk indicates that an alliance/association is considered sensitive by CDFW.
** Although there will be "permanent" and "temporary" impacts to Open Water to remove occlusions, this community would not be altered and would remain as an Open Water channel, and are therefore not included in impact totals.
*** Acreage in parentheses indicate in-channel occlusion removal areas that would be turned into open water.

TABLE 3.3-4
IMPACTS TO CDFW POTENTIALLY JURISDICTIONAL AREAS

Jurisdiction Types	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Total Impacts (Acres)	Avoided (Acres)
CDFW Riparian	470.1	5.7 (5.2)*	35.5	41.2 (5.2)*	428.9
Total	**470.1**	**5.7 (5.2)***	**35.5**	**41.2 (5.2)***	**428.9**

* Acreage in parentheses indicate in-channel occlusion removal areas that would be turned into open water, and would still be CDFW jurisdictional streambed.

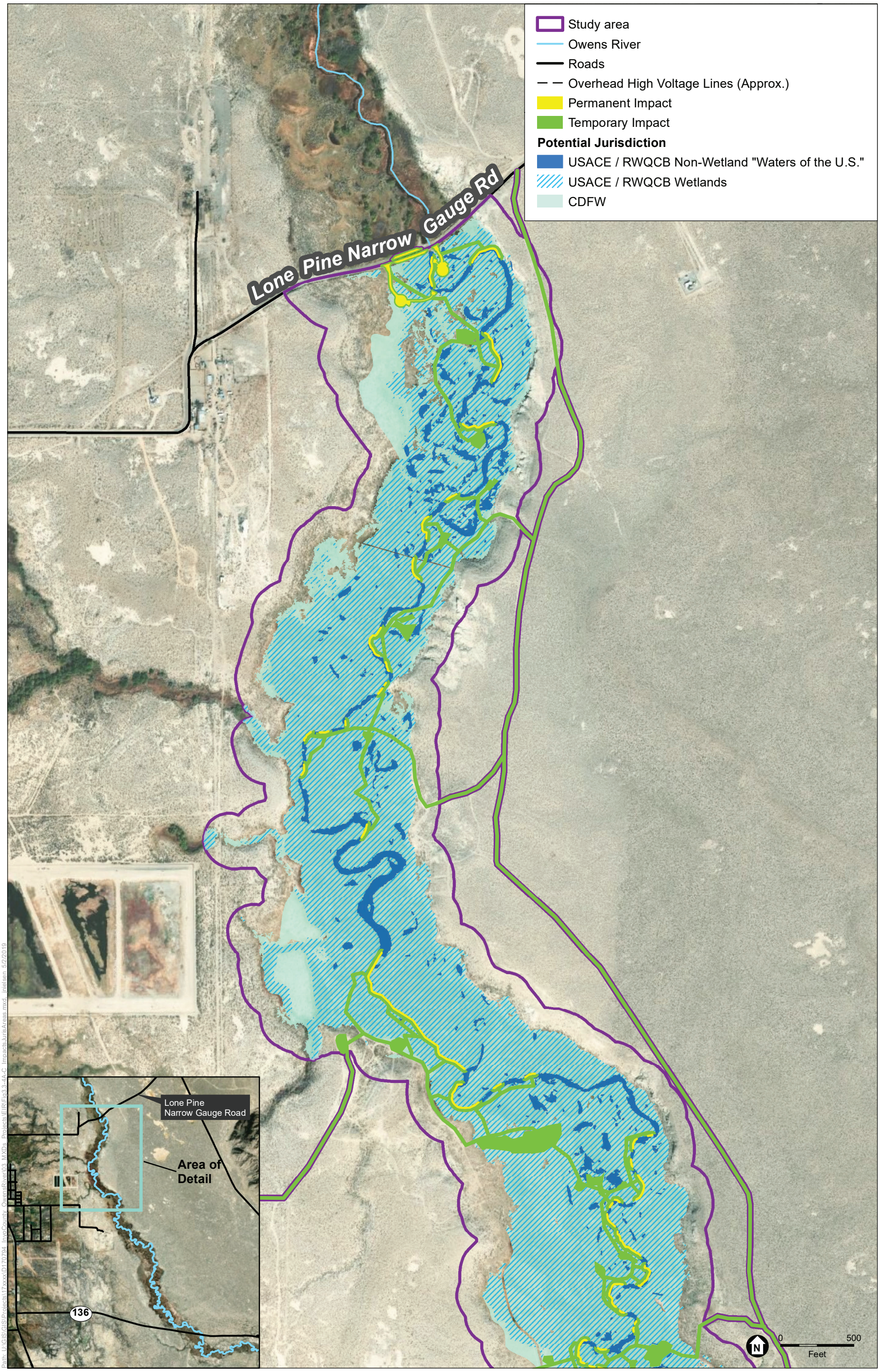


SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-4
Impacts to Potential Jurisdictional Areas

ESA



SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-4A
Impacts to Natural Communities

ESA

Path: U:\GIS\GIS\Projects\17xxxx\D170794_InyoCounty_OwensRiver\03_MXDs_Projects\EIR\Fig3.3-4A-C_ImpactsJurisAreas.mxd_jnielsen_5/2/2019

Study area
Owens River
Roads
Overhead High Voltage Lines (Approx.)
Permanent Impact
Temporary Impact

Potential Jurisdiction

USACE / RWQCB Non-Wetland "Waters of the U.S."
USACE / RWQCB Wetlands
CDFW

Lone Pine
Narrow Gauge Road

Area of
Detail

136

N

0 500
Feet

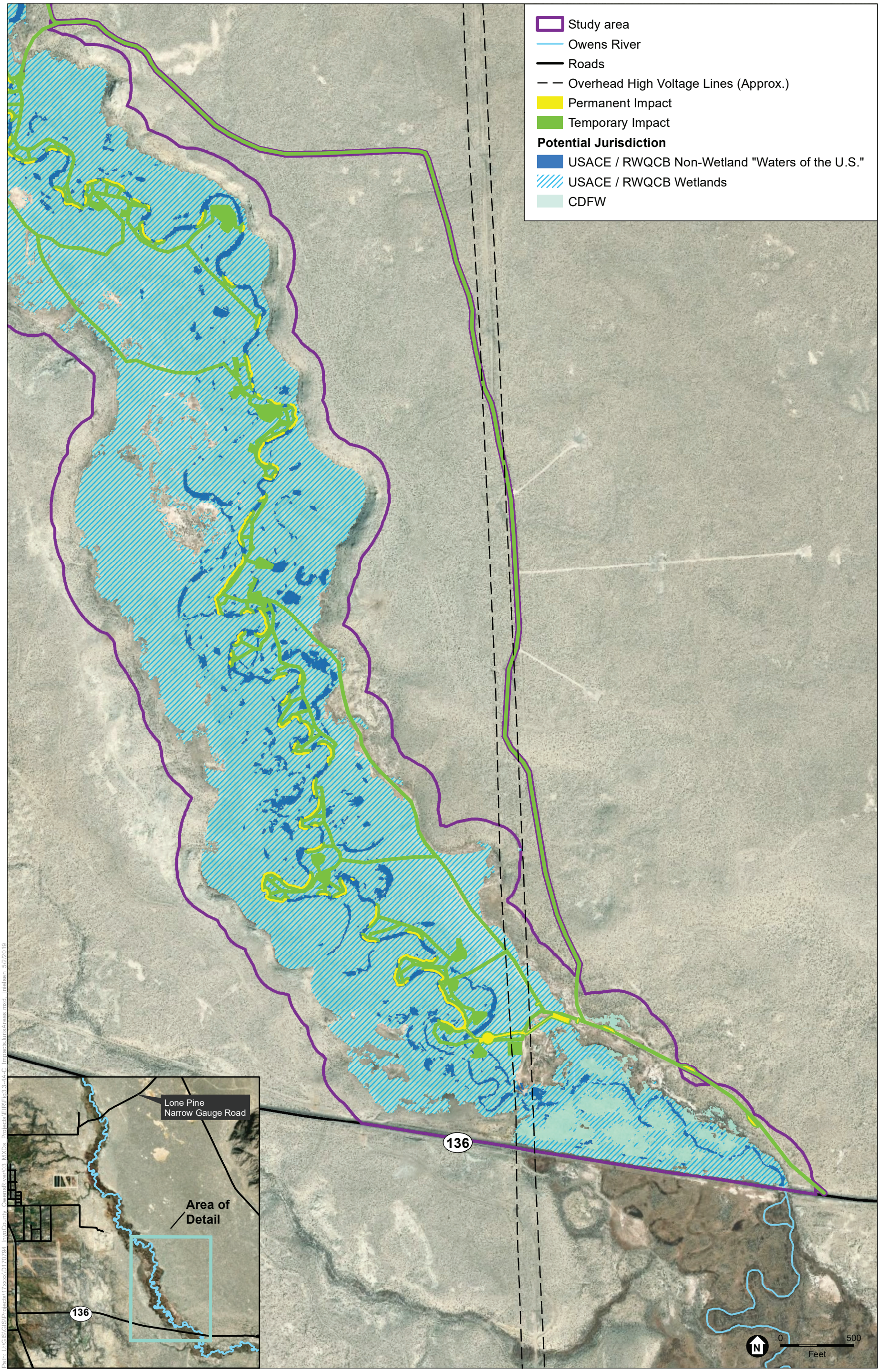
Path: U:\GIS\GIS\Projects\17xxxx\D170794_InyoCounty_OwensRiver\03_MXDs_Projects\EIR\Fig3.3-4A-C_Impacts_JurisAreas.mxd, jnielsen 5/2/2019

SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-4B
Impacts to Natural Communities

ESA



SOURCE: DigitalGlobe 11/3/2017; ESA, 2019.

Owens River Water Trail

Figure 3.3-4C
Impacts to Natural Communities

ESA

Wetlands

Threshold BIO-3: The project would result in a significant impact if the project would have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact Statement BIO-3: *The proposed project has the potential to have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. However, implementation of Mitigation Measure BIO-6 would reduce impacts to wetlands and waters to a less than significant level.*

The study area supports waters and wetlands that are potentially under the jurisdiction of the USACE and RWQCB. The proposed project would permanently impact 3.7 acres of potential USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S.", of which 3.2 acres of USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S." would be turned into open water from in-channel occlusion removal and would therefore still be under USACE/RWQCB jurisdiction (i.e., changed from jurisdictional wetland to jurisdictional "waters of the U.S."). As reported in the Draft LORP 2018 Annual Report, the LORP is aggrading (i.e., increasing in land elevation due to deposition of sediment) and "the river channel is expected to become more occluded and the extent of marsh will increase at the expense of open water. As the LORP continues to aggrade, its functional character becomes more like an elongated marsh and less like a riverine system" (LADWP and Inyo County 2018a). Thus, creation of the water trail would have the benefit of helping to maintain the open water within the river channel (i.e., by removal of occlusions via mechanical equipment). The proposed project would also temporarily impact 32.3 acres of potential USACE/RWQCB wetlands and 2.4 acres of USACE/RWQCB "waters of the U.S." **Table 3.3-5** summarizes the permanent and temporary impacts on potential USACE/RWQCB jurisdictional "waters of the U.S." from the proposed project (shown in **Figure 3.3-4**). The project would avoid 383.6 acres of USACE/RWQCB wetlands and 21.8 acres of USACE/RWQCB "waters of the U.S." within the study area. Temporary impacts would occur to "waters of the U.S." and wetlands as a result of access routes and staging areas for construction, and spoils generated from the removed occlusions. It is anticipated that access routes would mostly follow already existing dirt roads, or would temporarily crush vegetation for a short duration where dirt roads do not exist for equipment to access areas where excavation must occur. Thus, it is expected that any crushed vegetation would reestablish and regrow naturally. It is also anticipated that spoils will breakdown (e.g., through natural decomposition; trampling, bedding, and grazing by cattle; natural recruitment of saltgrass and other plants on top of and through the spoils). Therefore, temporary impacts from the access routes, staging areas, and spoils are expected to passively recover and reestablish naturally to pre-project conditions.

Permanent impacts would occur to wetlands with installation of the boat launch and take-out facilities, and the removal of tules (i.e., occlusions) to create and maintain the water trail. However, the removal of occlusions would also create an open channel that would re-establish and maintain "waters of the U.S." as well as improve water flows. Tules can have both positive

and negative effects on water quality. Positive effects include trapping sediments, nutrient uptake, and filtering pollutants (Ecosystem Sciences 2012). Negative effects include degrading water quality by adding large amounts of organic material that may later be mobilized into the river system, and prolific tule growth and subsequent die-off of the excessive biomass could impede river flow and have a deleterious effect on dissolved oxygen, as well as sediment transport and deposition within a river system (Ecosystem Sciences 2012). Tules are the dominant and densest vegetation and, along with leaf litter, is the greatest carbon source to the LORP. Dissolved organic carbon and particulate organic carbon combined with sediments are deposited on the river bottom as silt, muck, and flocculants (Ecosystem Sciences and LORP MOU Consultants 2014). Since the Owens River is controlled at a regulated flow (typically 40 cfs), the annual seasonal habitat flows are intended to "create a natural disturbance to establish and maintain native riparian vegetation and channel morphology" with "habitat flows of sufficient frequency, duration and amount that would (1) minimize the amount of muck and other river bottom material that is transported out of the riverine-riparian system, but would cause this material to be redistributed on banks, floodplain and terraces within the riverine-riparian system and the Owens River delta for the benefit of the vegetation; (2) fulfill the wetting, seeding, and germination needs of riparian vegetation, particularly willow and cottonwood; (3) recharge the groundwater in the streambanks and the floodplain for the benefit of wetlands and the biotic community; (4) control tules and cattails to the extent possible; (5) enhance the fishery; (6) maintain water quality standards and objectives; and (7) enhance the river channel" (LADWP and EPA 2004). However, contrary to predictions, not all of these objectives have been realized, and the current flow management seems to have promoted the expansion of tules and cattails instead (Ecosystem Sciences and LORP MOU Consultants 2014). As such, the removal of occlusions would help to achieve some of the goals outlined in the LORP Memorandum of Understanding (MOU),[12] especially by controlling tules and cattails, redistributing muck and other river bottom material onto banks and floodplain terraces, and enhancing the river channel. Regardless, potential permanent impacts to USACE/RWQCB jurisdictional wetlands and "waters of the U.S." would be significant. Implementation of mitigation measure BIO-6 would reduce impacts to a less than significant level.

TABLE 3.3-5
IMPACTS TO USACE/RWQCB POTENTIALLY JURISDICTIONAL AREAS

Jurisdiction Types	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Total Impacts (Acres)	Avoided (Acres)
USACE/RWQCB Wetlands	419.6	3.7 (3.2)*	32.3	36.0 (3.2)*	383.6
USACE/RWQCB Non-Wetlands	26.2	2.0 (2.0)*	2.4	4.4 (2.0)*	21.8
Total	**445.8**	**5.7 (5.2)***	**34.7**	**40.4 (5.2)***	**405.4**

* Acreage in parentheses indicate in-channel occlusion removal areas that would be turned into open water, and would be changed from USACE/RWQCB jurisdictional wetland to non-wetland "waters of the U.S.".

[12] In 1997, LADWP and Inyo County entered into a settlement agreement (Memorandum of Understanding [MOU]) with the CDFW, California State Lands Commission, Sierra Club, and Owens Valley Committee. The MOU specifies the amount of baseflow to be maintained in the river, and the release of higher season habitat flows (LADWP and Inyo County 2010).

Migratory Species and Wildlife Corridors

Threshold BIO-4: The project would result in a significant impact if the project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede with the use of native wildlife nursery sites.

Impact Statement BIO-4: *The proposed project has the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede with the use of native wildlife nursery sites. However, implementation of Mitigation Measures BIO-7, BIO-2, BIO-8, BIO-9, and BIO-10 would reduce impacts to wildlife movement and nursery sites to a less than significant level.*

The study area is a regional wildlife movement corridor. Although permanent impacts will occur to 3.8 acres of natural communities for construction of the boat launch and take-out facilities and the water trail, the boat launch and take-out facilities and water trail would not inhibit wildlife movement via the Owens River or through the study area. The limited footprint of the boat launch and take-out facilities would be traversable by wildlife, and the habitat adjacent to the 15-foot-wide water trail would continue to provide resources for foraging and cover to wildlife. Temporary impacts would consist of access routes and staging areas for construction, and spoils generated from the removed occlusions. It is anticipated access routes would mostly follow already existing dirt roads, or will temporarily crush vegetation for a short duration where dirt roads do not exist for equipment to access areas where excavation must occur. Thus, it is expected that any crushed vegetation would reestablish and regrow naturally. It is also anticipated that spoils will breakdown (e.g., through natural decomposition; trampling, bedding, and grazing by cattle; natural recruitment of saltgrass and other plants on top of and through the spoils). Therefore, temporary impacts from the access routes, staging areas, and spoils are expected to passively recover and reestablish naturally to pre-project conditions. Thus, direct impacts to regional wildlife movement are less than significant. Furthermore, potential impacts to CDFW jurisdictional riparian habitat require implementation of mitigation measure BIO-5.

In addition, the project may benefit common fish species by removing occlusions, which will improve water flow and possibly improve water quality for the warm-water fishery, since excessive tule biomass can have a deleterious effect on dissolved oxygen, and a negative effect on water quality (e.g., caused by tule abundance and decomposition), and their aggressive expansion into many aquatic systems has decreased plant diversity and habitat diversity for many wildlife species (Ecosystem Sciences 2008 and 2012). Dissolved oxygen is necessary to maintain aerobic conditions in surface water and is a primary indicator of the suitability of surface water to support aquatic life (County of Inyo Water Department 2014). Fish kills occur when dissolved oxygen drops below the lethal threshold of 1.0 milligrams/liter (mg/l), which has occurred at various times within the LORP. CDFW attributed a previous substantial fish kill in 1989 to dissolved oxygen levels as low as 0.2 mg/l caused by disturbance of accumulated organic material and the lack of flushing flows (Ecosystem Sciences and LORP MOU Consultants 2014). As reported in the Draft LORP 2018 Annual Report, the LORP is aggrading (i.e., increasing in land elevation due to deposition of sediment) and "the river channel is expected to become more occluded and the extent of marsh will increase at the expense of open water. As the LORP continues to

aggrade, its functional character becomes more like an elongated marsh and less like a riverine system" (LADWP and Inyo County 2018a). Thus, creation of the water trail will help to maintain the open water within the river channel.

Warm-water fish species, including, but not limited to, largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), and bluegill (*Lepomis macrochirus*), are well established within the Lower Owens River and are sought after species by fisherman. Though these species' habitat requirements vary slightly, they occupy extremely similar habitats and conditions. These species prefer warm, shallow waters of moderate clarity with bedded and rooted aquatic plants and vegetation (Moyle 2002). During periods of high flow, largemouth bass (and other warm water species) may be flushed out of streams and rivers, although they do have an astonishing capacity to persist on their own, by finding shelter in deep and/or flooded areas (Moyle 2002). They quickly recolonize such streams and build up populations during periods of lower flow. They also have the ability to withstand adverse water quality conditions (Coutant 1975). Largemouth and smallmouth bass are solitary hunters and an individual may either remain in a relatively restricted area centered around a submerged rock or branch or wander widely (Lewis and Flickinger 1967), both of which are readily available within the project area and Lower Owens River. Bluegill spend most of their lives in a rather restricted area, giving the species familiarity with an area within which it needs to find food and avoid predators, such as largemouth bass.

During occlusion removal within the project area, bass and other warm-water species may temporarily travel upstream, downstream, or other locations of refuge due to in-water construction noise and activity, turbidity increase, and fluctuating water levels. The fishes however, will be able to recolonize this area after construction ends or slows down. Although fish use aquatic vegetation (e.g., tules) for food and providing refuge, there will still be an abundance of vegetation along the river banks, cut banks, and side channels to provide these resources. Additionally, aquatic vegetation may also eventually reestablish within the project area, creating more refuge opportunities for fish. However, turbidity associated with project construction and maintenance could have a potentially significant impact on movement of common fish species and their spawning sites. In 2001, beaver dams were removed via helicopter and a pilot operated "grabber jaw" attached to a cable (LADWP 2002). Water quality (dissolved oxygen, turbidity, and electrical conductivity) was measured before, during, and after dam removal. During most dam removals, a decrease in dissolved oxygen was not observed and turbidity only slightly increased due to plumes stirred up during dam removal. Electrical conductivity also did not have a significant change. During beaver dam removal, no aquatic species were observed as injured or dead. Similar results may be expected during implementation of the proposed project. Nonetheless, implementation of mitigation measure BIO-7 would reduce impacts to a less than significant level.

Although the proposed project would not physically impede movement through the study area, increased human activity and recreation along the Owens River may deter wildlife species that are more sensitive to human disturbances, such as tule elk that frequent the area, and could be an indirect effect of the proposed project. There have been anecdotal accounts of mountain lion passing through the area (LADWP 2019). The amount of people that would use the water trail is

unknown, but since the water trail will be open to recreationalists year-round, it is possible that there could be regular, frequent use of the ORWT. More secretive wildlife, such as mountain lion, may be deterred from areas with high human activity and avoid these areas during times of high human use (e.g., daytime, summertime), and opt to move through the area when people are not present (e.g., nighttime). It is anticipated that recreationalists would be limited to the boat launch and take-out facilities and water trail itself, and wildlife would be able to move through other habitat around the study area for cover. However, there is potential for paddlers to get out along the side of the water trail and explore, which may disrupt wildlife moving through the area (Morrison, pers. comm. 2018). Other indirect impacts include off-leash dogs that could be a threat to local wildlife, and increased trash that may attract nuisance wildlife (e.g., crows, ravens, coyotes) to the area. Thus, the increased human activity could have a potentially significant indirect impact on use of the wildlife corridor. Implementation of mitigation measure BIO-8 would reduce impacts to a less than significant level.

In addition, the study area supports habitat for migrating birds. The proposed project would avoid over 640 acre of habitat, including 104 acres of hardstem bulrush marsh; thus, even with removal of occlusions, there will be ample habitat available for nesting birds immediately surrounding the water trail, as well as within adjacent areas upstream and downstream. Nesting activity typically occurs from February 1 to September 30[13]. Disturbing or destroying active nests is a violation of the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.). In addition, nests and eggs are protected under Fish and Wildlife Code Section 3503. As detailed in the Project Description, project construction would avoid the spring and summer months to avoid bird nesting season. However, if bird nesting season cannot be avoided and vegetation is removed during the nesting season for the construction of the proposed project or on-going annual maintenance, any potential impacts to songbird and/or raptor nests would be considered potentially significant. Implementation of mitigation measure BIO-2 would reduce impacts to a less than significant level.

The study area is also an important nursery area for elk calving. Based on personal communication with Mike Morrison of CDFW, Mr. Morrison expressed concerns that with project construction, disruption of elk during calving season (which is primarily from mid-April through early June) could spook the elk and result in injury or abandonment of the young (Morrison, per. comm. 2018). Thus, impacts to elk nursery sites would be considered potentially significant. Implementation of mitigation measure BIO-9 would reduce impacts to a less than significant level.

Quagga mussels (*Dreissena rostriformis bugensis*) are an invasive aquatic species from eastern Europe, which were likely introduced by ballast water discharge from transoceanic ships. These prolific breeders can attach to hard and soft surfaces in fresh waterways, and have been transported via recreational boats. If boats are not cleaned and dried adequately, contaminated watercraft moved from an infested waterway to a pristine water body can introduce mussels into an area. Quagga mussels can survive for 3 to 5 days out of water without suffering lethal desiccation (University of California, Riverside 2019). With recreational use of the water trail,

[13] Nesting season is defined based on *Final Environmental Impact Report & Environmental Impact Statement for the Lower Owens River Project, Inyo County, California* (LADWP and U.S. Environmental Protection Agency 2004), as well as input from LADWP.

Quagga mussels have potential to be introduced to the study area. These species can encrust river bottoms and compete with and displace native species (e.g., aquatic arthropods), which can in turn affect other species within that ecosystem, such as the fish that feed on those native species. High mussel populations can also increase water acidity and decrease concentrations of dissolved oxygen (University of California, Riverside 2019). According to the USGS map of Nonindigenous Aquatic Species Database, there are no known local occurrence of Quagga mussels within the vicinity of the study area; the nearest occurrence of Quagga mussels is approximately 140 miles away in Pyramid Lake in Southern California. Additionally, since recreation would be limited to non-motorized watercraft, such as kayaks, stand-up paddle boards, and canoes, these would be small watercraft that are relatively easy to clean and inspect for Quagga mussels, and the study area's high temperatures and low humidity would also likely contribute to desiccation of any potential Quagga mussels that could be introduced. Regardless, the introduction of Quagga mussels into the study area would be considered potentially significant. Implementation of Mitigation Measure BIO-10 would reduce impacts to a less than significant level.

Local Policies and Ordinances

Threshold BIO-5: The project would result in a significant impact if the project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Statement BIO-5: *The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

The proposed project would not conflict with the goals of the Inyo County General Plan Conservation and Open Space Elements. Specifically, the project would be consistent with Goal BIO-1 to "maintain and enhance biological diversity and healthy ecosystems throughout the County" through the incorporation of appropriate mitigation measures for impacts to sensitive natural communities and special-status species per Policy BIO-1.1 (Regulatory Compliance); encouraging the restoration of degraded biological communities by removing occlusions and improving flows and water quality per Policy BIO-1.3 (Restoration of Biodiversity); and preserving and protecting existing wildlife corridors where appropriate per Policy BIO-1.5 (Wildlife Corridors). The project would also achieve Goal BIO-2 to "provide a balanced approach to resource protection and recreational use of the natural environment" by encouraging appropriate access to resource-managed lands per Policy BIO-2.2 (Appropriate Access for Recreation) and providing and supporting passive recreational opportunities and interpretive education in the natural environment per Policy BIO-2.4 (Nature as Education). Thus, the proposed project would be consistent with the goals of the General Plan Conservation and Open Space Elements and would not conflict with this plan.

The project would be consistent with the goals of the LORP by removing occlusions, which will improve water flow, increase dissolved oxygen, and possibly improve water quality, which would benefit the warm-water fishery, since excessive tule biomass can have a deleterious effect on dissolved oxygen, and a negative effect on water quality (e.g., caused by tule abundance and decomposition) (Ecosystem Sciences 2008 and 2012). Additionally, with implementation of

mitigation measures, the project would comply with all federal and state laws to protect special-status species while providing for recreation. Therefore, the project would be consistent with the Long Term Agreement and the goals of the LORP and would not conflict with this plan.

Additionally, the Owens Valley Land Management Plan (OVLMP) was finalized by LADWP in April 2010 and provides management direction for resources on all lands owned by LADWP in Inyo County, excluding the LORP area. The OVLMP is an overarching resource management plan that complements the LORP for monitoring and managing resources from Pleasant Valley Reservoir to Owens Lake. Since the OVLMP doesn't include the LORP area (which includes the study area), this plan is not applicable to the project. For this reason, the proposed project is not subject to the provisions of the OVLMP and therefore would not conflict with this plan.

Habitat Conservation Plan

Threshold BIO-6: The project would result in a significant impact if the project would conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact Statement BIO-6: *The proposed project would not conflict with the provisions of an adopted NCCP/HCP, or other approved local, regional, or state habitat conservation plan.*

A *Habitat Conservation Plan for LADWP's Operations, Maintenance, and Management Activities on Its Land in Mono and Inyo Counties* (LADWP 2015) was drafted in 2015. While the Draft HCP includes the study area, this plan is not applicable to the project since the proposed project is not a part of LADWP's Operations, Maintenance, and Management Activities, nor is it a covered activity of that HCP. Thus, the proposed project is not subject to the provisions of the HCP and therefore would not conflict with this plan.

3.3.5 Cumulative Impacts

The geographic context for the analysis of cumulative impacts to biological resources is the lower Owens River watershed. As listed in Table 3-2, approximately 11 related projects are proposed for development or implementation in the area. The related projects in the vicinity include expansion of an existing quarry, remediation of a disposal site, roadway and runway expansion and repairs, new utility transmission lines, modifying the Owens Lake dust control program, and water-based projects that may include the construction of a new dam. Similar to the proposed project, many of these projects have the potential to impact biological resources, and it is expected that these projects would be or have been subject to analysis and review under CEQA and/or requirements of regulatory agencies (e.g., USACE, USFWS, CDFW, RWQCB), and that any significant impacts to biological resources would be mitigated.

Project-related impacts to biological resources would be minimized and mitigated through implementation of Mitigation Measures BIO-1 through 10. Permanent impacts to sensitive biological resources (e.g., habitat) will be mitigated and/or replaced at an equal or greater quantity. Thus, the project would not contribute to a cumulatively considerable impacts on

biological resources associated with the proposed construction or maintenance activities. Cumulative impacts related to biological resources would be less than significant.

3.3.6 Mitigation Measures

Mitigation Measure BIO-1: The following mitigation shall be implemented for avoidance and minimization of impacts to special-status plant species within the project site:

a. Prior to construction activities, a focused rare plant survey shall be conducted by a qualified biologist to confirm presence/absence of special-status plant species within the project site (i.e., within the project footprint where direct permanent or temporary impacts due to ground disturbance may occur) within the appropriate blooming periods of each species (unless a qualified biologist confirms that special-status plant species can be definitively identified outside of the blooming period).

b. If any special-status plant species are found, these species or population shall be flagged (or otherwise delineated) by a biologist and shall be avoided to the greatest extent feasible (i.e., no work will occur within a 50-foot buffer of special-status plants). If work occurs within a 50-foot buffer of a special-status plant species individual and/or population, a qualified biologist shall be on-site during any ground disturbing activities.

c. To minimize indirect impacts to special-status plant species within the project site, prior to construction activities, all heavy equipment proposed for use on-site shall be cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the project site to reduce the potential for the spread of weed seeds during the project. In addition, to discourage non-native or invasive weed species from establishing on the piles within the spoils areas, any muds shall be covered with cut native vegetation to act as a protective mulch as the materials decompose.

d. If avoidance of a special-status plant species is not feasible (i.e., no work will occur within a 50-foot buffer of special-status plants), and potential impacts to special-status plant species is considered significant (i.e., impacts would threaten regional populations of these species), coordination with Inyo County staff biologist(s) would be required to confirm suitable mitigation prior to ground-disturbing activities. The mitigation strategy may include avoidance, on-site or off-site translocation, seed collection, and/or restoration, and shall be outlined in a mitigation plan to be approved by Inyo County. At a minimum, the plan shall include a description of the existing conditions, methodology, site preparation and planting methods, and maintenance and monitoring schedule.

e. Owens Valley checkerbloom is State Endangered. If this species is found within the project site and avoidance is not feasible (i.e., no work will occur within a 50-foot buffer of special-status plants), the County shall obtain a 2081 Incidental Take permit under CESA from the CDFW. The following would be incorporated, as a minimum, into the permitting, subject to approval by CDFW.

1. A mitigation and monitoring plan shall be prepared. The plan shall focus on the preservation and/or replacement of the resource (e.g., transplantation, seeding, planting; salvage/dispersal of duff and seed bank; removal of large stands of invasive species); and maintenance and future monitoring.

f. Additionally, in accordance with the Native Plant Protection Act (FGC, Division 2, Chapter 10, Section 1913), the Project Proponent[14] shall notify the CDFW "at least 10 days in advance of changing the land use to allow for salvage of such plant. The failure by the department to salvage such plant within 10 days of notification shall entitle the owner of the land to proceed without regard to this chapter."

Mitigation Measure BIO-2: Impacts to nesting birds would be avoided by conducting all construction and maintenance activities outside of the bird nesting season (i.e., work shall occur October 1 to January 31). If bird nesting season cannot be avoided, the following measures would be followed:

a. During the bird nesting season (February 1 to September 30), a qualified biologist shall conduct a pre-construction survey of all suitable habitat for the presence of nesting birds no more than 5 days prior to construction and/or maintenance activities. The results of the pre-construction survey would be valid for 5 days; if vegetation removal activities do not commence within 5 days following the survey, a new pre-construction nesting bird survey shall be conducted before these activities begin again.[15]

b. If any active nests are found during a pre-construction nesting bird survey, a buffer of 300 feet (500 feet for raptors), or as determined appropriate by the qualified biologist (based on species-specific tolerances and site-specific conditions), would be delineated, flagged, and avoided until the nesting cycle is complete (i.e., the qualified biologist determines that the young have fledged or the nest has failed).

Mitigation Measure BIO-3: The County shall implement an Environmental Awareness Program intended to educate the public of the biological resources and special-status species associated with the Owen River. The intention of the program shall be to encourage active conservation efforts among the public to help conserve the natural resources of the area. At a minimum, the Environmental Awareness Program shall include the following components:

a. An informational kiosk shall be installed at the entrance point to the water trail that informs the public about the natural resources of the area. The intent of the kiosk is to bring awareness to the biological resources associated with the Owen River, and inform recreationalists to stay on the water trail, that dogs shall be kept on-leash, and that trash shall be properly disposed of in trash receptacles.

[14] LADWP would designate authority to the County for such notification.

[15] Given the linear nature of the project area, a phased approach to pre-construction nesting bird surveys is recommended, and should be based on the project's construction or maintenance schedule for work areas anticipated to be completed within 5 days of each area survey.

b. Signage shall be incorporated to deter unauthorized public access off of the Owens River Water Trail. Public access shall be limited to the boat launch and take-out facilities and water trail only.

Mitigation Measure BIO-4: The County shall implement the following measure to ensure temporary and permanent impacts to sensitive natural communities are less than significant:

a. Prior to construction, a qualified biologist would flag any sensitive natural communities in the field, which will be avoided to the maximum extent practicable. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist.

b. To discourage non-native or invasive weed species from establishing on the piles within the spoils areas, any muds shall be covered with cut native vegetation to act as a protective mulch as the materials decompose.

c. Temporary impacts to sensitive natural communities are expected to passively recover and reestablish naturally to pre-project conditions based on project design and construction methodologies. The County shall retain a qualified biologist to monitor temporary impact areas for two years to ensure the project site returns to pre-project conditions (i.e., pre-project elevation contours and revegetated). If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions.

d. For permanent impacts to sensitive natural communities, the County shall provide one of the following options, or a combination thereof:

    1. On- and/or off-site preservation of sensitive natural communities at a ratio no less than 1:1 for permanent impacts.

    2. On- and/or off-site creation, restoration, and/or enhancement of sensitive natural communities at a ratio no less than 2:1 for permanent impacts. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration, and/or enhancement of equivalent habitats within disturbed habitat areas of the project site and/or off-site.

Mitigation Measure BIO-5: The County shall obtain a Streambed Alteration Agreement permit under Section 1602 of the California Fish and Wildlife Code from the CDFW. The following would be incorporated, as a minimum, into the permitting, subject to approval by CDFW:

a. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist experienced in jurisdictional delineations.

b. Temporary impacts to jurisdictional riparian habitat would be returned to pre-project conditions (i.e., pre-project elevation contours and revegetated), and will be monitored for two years, or until a qualified biologist determines that the project site has returned to pre-project conditions. If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions.

c. For permanent impacts to jurisdictional riparian habitat, the County shall provide one of the following options, or a combination thereof:

    1. On- and/or off-site preservation of CDFW jurisdictional riparian habitat at a ratio no less than 1:1 for permanent impacts, or a reduced ratio if mutually-agreed upon with CDFW.

    2. On- and/or off-site creation, restoration, and/or enhancement of CDFW jurisdictional riparian habitat at a ratio no less than 2:1 for permanent impacts, or a reduced ratio if mutually-agreed upon with CDFW. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration, and/or enhancement of equivalent habitats within disturbed habitat areas of the project site and/or off-site.

Mitigation Measure BIO-6: The County shall obtain a CWA Section 404 permit from the USACE and a CWA Section 401 permit from the RWQCB. The following would be incorporated, as a minimum, into the permitting, subject to approval by the USACE and RWQCB:

a. The following measures, prescribed below, would only apply to those areas actually impacted (e.g., in case it is less than those maximum impact acreages calculated and analyzed in this report), which would be documented by a qualified biologist.

b. Areas of jurisdictional wetlands temporarily impacted by the project shall be monitored for two years, or until a qualified biologist determines that the project site has returned to pre-project conditions. If determined necessary by the qualified biologist, if plants are not reestablished via natural recruitment, a revegetation plan would be prepared, and subsequently monitored by a qualified biologist until the project site has returned to pre-project conditions.

c. For permanent impacts to jurisdictional wetlands, the County shall provide one of the following options, or a combination thereof:

    1. On- and/or off-site preservation of USACE/RWQCB jurisdictional “waters of the U.S.” at a ratio no less than 1:1 for permanent impacts, or reduced ratio if mutually-agreed upon with regulatory agencies.

    2. On- and/or off-site creation, restoration, and/or enhancement of USACE/RWQCB jurisdictional “waters of the U.S.” at a ratio no less than 2:1 for permanent impacts, or reduced ratio if mutually-agreed upon with regulatory agencies. A mitigation and monitoring plan shall be prepared. The plan shall focus on the creation, restoration, and/or enhancement of

equivalent features within disturbed areas of the project site and/or off-site. In addition, the plan shall provide details as to the implementation, performance standards, success criteria, maintenance, and future monitoring.

Mitigation Measure BIO-7: At the start of in-water work, a hydrologist/biologist shall monitor water quality (e.g., based on thresholds determined appropriate by the County hydrologist) and fish stress (e.g., indicated by surface mouthing, schooling and leaving an area, or observation of invertebrates crawling out of the water to get air) during the initial construction. If determined necessary by the monitoring hydrologist/biologist, a sediment curtain or other measures to minimize/limit turbidity would be installed within the project area.

Mitigation Measure BIO-8: The Environmental Awareness Program shall include information about the wildlife corridor associated with the Owens River. Signage shall inform recreationalists about the wildlife corridor and the importance of staying on the water trail or boat launch and take-out facilities only, respecting wildlife and stay a safe distance away, and not feeding wildlife.

Mitigation Measure BIO-9: Impacts to elk nursery sites would be avoided by conducting all construction and maintenance activities outside of the elk calving season (i.e., work shall occur July 1 to March 31). During construction, the placement of large woody debris shall be strategically placed along the banks to discourage recreationalists from disembarking along the river, where possible. In addition, cattle exclusion fencing may be installed along the boat launch and take-out facilities to confine recreationalists to the developed areas and to separate visitor from cattle.

Mitigation Measure BIO-10: Signage shall be installed to inform recreationalists about Quagga mussels and how to sanitize their gear and equipment before entering and after exiting the water trail to prevent the spread of this invasive species.

3.3.7 Level of Significance After Mitigation

With the incorporation of Mitigation Measures BIO-1 through BIO-10 impacts to biological resources would be less than significant.

3.4 Cultural Resources

This section addresses the potential impacts of the proposed project to cultural resources in the project vicinity in accordance with the significance criteria established in Appendix G of the *CEQA Guidelines*. This section is based on the Cultural Resources Assessment prepared by ESA dated 2019.[1] Cultural resources include prehistoric and historic-period archaeological sites, structures, districts, places, and landscapes, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious or any other reason. For the purposes of this analysis, cultural resources may be categorized into the following groups: archaeological resources, historic-period built resources (including architectural/engineering resources), contemporary Native American resources, and human remains.

3.4.1 Environmental Setting

Prehistoric Setting

The following paragraphs provide a brief overview of the cultural prehistory of the proposed project area and surrounding region. Prehistory is most easily discussed chronologically, in terms of environmental change and recognized cultural developments. The following cultural chronology focuses on the history of the Great Basin and specifically the Owens Valley and spans nearly 12,000 Years Before Present (YBP). Several sections were adapted from Matthew R. Des Lauriers' chronology discussion in Parr et al. (2001).

Paleo-Indian Period (ca. 12,000-10,000 YBP)

Little is known of Paleo-Indian peoples in the Owens Valley, and the cultural history of this period follows that of North America in general. Recent discoveries in the Americas have challenged the theory that the first Americans migrated from Siberia, following a route from the Bering Strait into Canada and the Northwest Coast sometime after the Wisconsin Ice Sheet receded (ca. 14,000 YBP), and before the Bering Land Bridge was submerged (ca. 12,000 YBP). A coastal migration route somewhat before that time is also possible. The timing, manner, and location of this crossing are a matter of debate among archaeologists, but the initial migration probably occurred as the Laurentide Ice Sheet melted along the Alaskan Coast and interior Yukon. The earliest radiocarbon dates from the Paleo-Indian Period in North America come from the Arlington Springs Woman site on Santa Rosa Island. These human remains date to approximately 13,000 YBP (Johnson et al., 2002). Other early Paleo-Indian sites include the Monte Verde Creek site in Chile (Meltzer et al., 1997) and the controversial Meadowcroft Rockshelter in Pennsylvania. Both sites have early levels dated roughly at 12,000 YBP. Life during the Paleo-Indian Period was characterized by highly mobile hunting and gathering. Prey included megafauna such as mammoth and technology included a distinctive flaked stone toolkit that has been identified across much of North America and into Central America. They likely

[1] *Owens River Water Trail Project Inyo County, California - Cultural Resources Assessment Report* (Vader and Lockwood, 2019).

used some plant foods, but the Paleo-Indian toolkit recovered archaeologically does not include many tools that can be identified as designed specifically for plant processing.

The megafauna that appear to have been the focus of Paleo-Indian life went extinct during a warming trend that began approximately 10,000 years ago, and both the extinction and climatic change (which included warmer temperatures in desert valleys and reduced precipitation in mountain areas) were factors in widespread cultural change. Subsistence and social practices continued to be organized around hunting and gathering, but the resource base was expanded to include a wider range of plant and game resources. Technological traditions also became more localized and included tools specifically for the processing of plants and other materials. This constellation of characteristics has been given the name "Archaic" and it was the most enduring of cultural adaptations to the North American environment.

Concentrations of Clovis points have been reported in the drainage basins of China Lake located approximately 50 miles south-southeast of the project area. According to Parr et al. (2001), Owens Valley work by Davis (1978) at China Lake suggested habitation contemporary with the Clovis Horizon elsewhere in the western United States, and the flaked stone evidence from Rose Valley (Borden, 1971; Des Lauriers et al., 1997) supports this to some degree. This limited evidence suggests that early human occupants of the Mojave probably lived in small, mobile groups in temporary camps on permanent water sources (Sutton et al., 2007). While the subsequent Lake Mojave Period has been documented at several locations in the Owens Valley proper (Basgall and McGuire, 1988), the initial peopling of the region is poorly understood.

Lake Mohave Period (ca. 10,000-7,000 YBP)

The Lake Mojave complex is considered to be Paleoindian in nature and ancestral to the early Archaic cultures that follow it in time. Lake Mojave sites have been found primarily around Fort Irwin, Lake Mojave, Lake China, Rosamond Lake, and Twentynine Palms, located near extinct water sources with the margins of pluvial lakes being the preferred settlement area. Subsistence and settlement patterns are likely to have been a direct response to climatic fluctuations occurring during the Pleistocene to Holocene transition. High mobility designed to exploit ever-changing resource bases, coupled with a reliance on more permanent resources (water sources), was likely. In particular, the China Lake basin seems to have been a preferred resource location. Lake Mojave populations were organized into relatively small, mobile groups and practiced a forager-like subsistence strategy. Sites appear to have been repeatedly occupied, with artifact assemblages from both large and small sites being functionally identical (Sutton et al., 2007).

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some ground stone implements (Parr et al., 2001; Sutton et al., 2007). The use of heavy projectile points, bifaces, and scrapers would suggest exploitation of large game. However, faunal assemblages and protein residue analyses from Fort Irwin represent heavy reliance on small game, such as rodents, reptiles, and lagomorphs (hares/rabbits/pikas). Ground stone wear is generally light, which suggests minor use of hard seeds. Marine shell beads and non-local lithic materials indicate trade and/or long-distance foraging. Heavily battered cobble tools are often recovered, but the nature of their use is unclear (Sutton et al., 2007).

Pinto Period (ca. 7,000-4,000 YBP)

Also known as the Clyde Phase in the Owens Valley (Bettinger, 1976; Moratto, 1984), the Pinto Period immediately follows the drying of the pluvial lakes. Pinto Period projectile points, also referred to as Little Lake points (Bettinger, 1976; Moratto, 1984; Warren and Crabtree 1986), are often notched, weakly shouldered, and sometimes have poorly developed barbs. Materials such as basalt and rhyolite were utilized for their manufacture. Obsidian is uncommon. The vast majority of Pinto Periods points were manufactured through percussion flaking and pressure-flaked using wood, tooth, bone, or antler (Parr et al., 2001).

Archaeological deposits dating from the Pinto Period suggest that Pinto settlement patterns consisted of seasonal occupation by small, semi-sedentary groups that were dependent upon a combination of big and small-game hunting and collection strategies, which could include the exploitation of stream or water resources. Typically, sites of this period are found along lakeshores and streams or springs, some of which are now dry, and in upland areas. Larger sites tend to be near well-watered locations, with smaller sites in other areas. In comparison to smaller sites, larger sites exhibit substantial midden deposits and greater variation in artifact types. These larger sites were probably centralized locations from which foraging parties journeyed to seasonal resources (Sutton et al., 2007).

The extent of regional mobility at this time is uncertain. A lack of lithic material diversity might indicate that foraging activities were not as expansive as in the previous complex (Sutton et al., 2007). However, *Olivella* shell beads are still present, which indicates at least some degree of contact with coastal groups.

Material culture representative of this period, in addition to the Pinto Points mentioned above, include “heavy-keeled” scrapers, choppers, and a greater prevalence of flat millingstones and manos (Warren, 1984). Pinto series projectile points appear to have been frequently reworked, suggesting they were used primarily as spear tips and not darts (Sutton et al., 2007).

Faunal assemblages are similar to those of the Lake Mojave Complex, with a slight increase in small fauna taxa coupled with a decrease in artiodactyls (Sutton et al., 2007). The rise of millingstones and manos indicates a more intensive use and processing of plant resources and site placement may have been in part based on access to plant resources. New dates indicate that intensive plant exploitation was occurring by ca. 9,000 YBP, which is contemporaneous with early coastal California groups (Sutton et al., 2007).

At the end of the Middle Holocene, around 5000 YBP, environmental conditions were characterized by the Altithermal, a period of hotter and drier conditions throughout much of western North America, and few sites in the Mojave date to the period between 5,000 and 4,000 YBP, suggesting that the area may have been largely abandoned during this period of unfavorable climate (Sutton et al., 2007).

Gypsum or Elko Period (4,000-1,500 YBP)

The Elko Period is also known as the Gypsum Period and the Newberry Period (Bettinger and Taylor 1974; Warren and Crabtree 1986). The Late Holocene was characterized by a wetter and cooler climate than the Middle Holocene. Settlement patterns suggest small, temporary camps concentrated near streams. This time period witnessed the adaptation of early archaic systems to less arid conditions that became prevalent throughout western North America after the Altithermal of the Middle Holocene (Moratto, 1984). This widespread climate change most likely allowed more intensive occupation of the desert areas, and may have afforded a degree of resource security previously unavailable in the region (Parr et al., 2001). In addition to the pursuit of an increasing diversity of resources, the hunting of large game seems to figure prominently in Elko Period economy and ideology

During this period, there is increased evidence of inter-group trade, particularly between the desert and the coast, and increasing social complexity (Sutton et al., 2007). The artifact assemblage associated with this period includes an increase in the prevalence of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite (Warren, 1984). Other artifacts associated with the Gypsum Period include Elko corner-notched series, concave base Humboldt series, and contracting-stemmed Gypsum series projectile points. Ritual activities are indicated by the presence of quartz crystals, paint, and rock art (Sutton et al., 2007). Toward the end of the Elko Period, larger dart points were replaced by smaller dart points, which also corresponds with the replacement of the atlatl projectile system by the bow and arrow (Moratto, 1984; Warren and Crabtree, 1986). Shortly after the end of the Elko Period the Numic Spread began (Sutton, 1986, 1994; Bettinger, 1994). Interestingly, there is a scarcity of Gypsum periods sites in the southern and eastern extent of the Mojave Desert (Sutton et al., 2007).

Rose Spring Period (1,500 -800 YBP)

The Rose Spring Period is also known as the Saratoga Springs Period and the Haiwee Period (Warren and Crabtree, 1986). During this period, there were increasing population densities, interregional trade, and the development of new settlement subsistence patterns in the Great Basin, all of which contributed to the success and intensity of the “Numic Spread” (Bettinger, 1977, 1989, 1994).

Overall, the general cultural pattern for this period is an intensification of that of the preceding Gypsum Period. The increase in cultural complexity continued into this period and the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence from the eastern Great Plains as evidenced by the appearance of turquoise and pottery (Warren, 1984).

Material culture related to this period includes large quantities of obsidian artifacts, Rose Spring and Eastgate series projectile points, knives, drills, pipes, bone awls, millingstones, manos, mortars and pestles, marine shell ornaments, slate pendants, and incised stones (Sutton et al., 2007; Warren, 1984). The bow and arrow continued in use. Rose Spring projectile points are

small side- or corner-notched arrow points that represent the first evidence for this highly effective weapon system (Yohe, 1992).

Archaeological sites from this period are more numerous and contain more well-developed middens than in the preceding period, indicating an increase in population and a more permanent settlement pattern (Sutton et al., 2007). Additionally, evidence of structures such as wickiups and pit houses also supports more permanent settlements. Sites tend to be located near springs, washes, and lakeshores (Sutton et al., 2007). By the end of this period, however, a decline in trade occurred and well-established village sites were abandoned, perhaps as a result of rising temperatures (known as the Medieval Climatic Anomaly) (Sutton et al., 2007; Warren, 1984).

Late Prehistoric Period (800 YBP to Contact)

Characterized most markedly by Cottonwood and Desert Side-notched projectile points and Owens Valley Brownware pottery, this phase possesses archaeological remains that are very similar to those of the ethnographically and historically documented Owens Valley Paiute and their neighbors. Also known as the Shoshonean Period, Marana Period, or Klondike Phase (Bettinger, 1976; Warren and Crabtree, 1986), site types from this period include large permanent or semi-permanent villages on alluvial fans along the west side of the Owens Valley (Riddell, 1951; Wilke, 1983), hunting camps, seed collecting and processing sites along the valley floor, fishing and other communal activity areas along the river and lake, and seasonally occupied piñon camps in the White and Inyo mountains (Bettinger, 1989). Lower ranked resources such as fresh water shellfish, acorns, and piñon continued to gain prominence in the diet

During the Late Prehistoric period, the environment within the western Mojave continued to deteriorate, new technologies were introduced, such as pottery, and an extensive network of established trade routes wound their way through the desert, routing goods to populations throughout the Mojave region and to points north and west. It is also believed that these trade routes encouraged or were the motivating factors for “increasingly complex socioeconomic and sociopolitical organization” within Late Prehistoric peoples in Southern California (Sutton et al., 2007; Warren, 1984). Housepit village sites are prevalent during this period, as are the presence of Desert series and Cottonwood projectile points, brownware and buffware ceramics, steatite shaft straighteners, painted millingstones, and, to a lesser degree, coastal shell beads.

Ethnographic Setting

The proposed project lies within an area where several ethnographic groups, including the Koso Shoshone and Owens Valley Paiute, claim affiliation. The lifeways of these groups are characteristic of the Late Prehistoric Period. The euroamerican incursion beginning in the mid-1800s contributed heavily to the depopulation of the Shoshone from traditional use area following the establishment of white settlements in Rose Valley and southern Owens Valley. Increased mining and ranching activities, followed by the establishment of a railway and the Los Angeles Aqueduct forever changed the Koso homeland. By the 1930’s, those Shoshone remaining in the region had relocated to the Owens Valley Indian reservations at Lone Pine, Big Pine and Bishop (Parr et al., 2001). Furthermore, the way of life of the Owens Valley Paiute changed drastically in the year after euroamerican settlement. Their lands were taken away and they became influenced

by immigrant populations of neighboring Indians, who brought with them a major distrust and hatred of the settlers. The Owens Valley Paiute survived years of conflict and relocation and still remain in the valley, although they are mixed with groups of neighboring Indians brought into the aforementioned reservations (Parr et al., 2001).

Historic Setting

Spanish Period (1769-1821)

The first Europeans known to have visited the Mojave were Pedro Fages in 1772, and Juan Bautista de Anza and Father Francisco Garcés in 1774 (Greene, 1983). In 1775, Father Garcés separated from de Anza and crossed the Mojave along the ancient Mojave Trail from Needles west to the San Gabriel Mission.

In the late 18th century, the Spanish began establishing missions along the California coast and forcibly relocated and converted native peoples (Horne and McDougall, 2003). The Spanish missions that dotted the California coast never spread inland to the Mojave, and the desert remained relatively unexplored and unsettled by Europeans for much of the next century.

Mexican Period (1821-1846)

In 1821, Mexico, which included much of present-day California, became independent from Spain, and during the 1820s and 1830s the California Missions were secularized. Mission property, although it was supposed to have been held in trust for the Native Californians, was handed over to civil administrators and then into private ownership through land grants. Because the northwestern Mojave Desert remained largely unexplored during the Spanish and Mexican period, the region was never within the sphere of the Mission system and there were no land grants to be given.

As early as the 1820s, American and French fur trappers began exploring the area. Jedediah Smith may have been the first Euro-American to explore the Owens Valley in 1826, but the first recorded passage into the region was made by Joseph Walker in 1834 when he traversed Walker pass through the Sierras and traveled north through the Owens Valley (DiPol, 2012). In 1843, Walker returned to the valley, this time as the guide for the Chiles emigrant party, the second wagon train to enter California from the east (Denardo et al., 2010). In 1845, Walker accompanied Captain John C. Fremont of the United States Topographic Engineers on a mapping expedition through the valley (Westbrook, 2011).

American Period (1846-Present)

In 1846, American forces seized California with the capture of the capital in Monterey, and the subsequent occupation of Los Angles in 1847. California officially became a state in 1850 when Mexico ceded the territory to the United States under the Treaty of Guadalupe Hidalgo.

The California Gold Rush of 1849 and the discovery of silver in the Comstock Lode in Nevada resulted in a population boom in Owens Valley as prospectors poured in. By 1860 a wagon and stage route extended from Los Angeles into Owens Valley (DiPol, 2012). In 1865, the Cerro Gordo mine was discovered and would become the largest silver producing mine in the state of

California. During the 1850s and 1860s mining became the largest industry in the region drawing settlers and increasing the population of the region so much, that in 1866, Inyo County was formed from portions of Tulare and Mono Counties (Denardo et al., 2010).

As the mining industry in the Owens Valley grew, so too did the need for railroads to transport supplies and ore to and from the mines, respectively. To meet this need, William Sharon and Darius Ogden Mills, co-founders of the Virginia and Truckee Railroad located in Nevada, began construction of the Carson and Colorado Narrow Gauge Railroad in 1880. Sharon and Mills proposed the construction of the 3-foot wide narrow gauge railroad to capitalize on the growing mining industries in the California desert epitomized by the Cerro Gordo Mine, located approximately 13 miles southeast of the proposed project (Clements, 2016). The railroad was completed in 1883, stretched 300 miles from Moundhouse, Nevada in the north to Keeler, California, located approximately 10 miles southeast of the proposed project, in the south. A segment of the railroad is located approximately 1 mile east of the proposed project. The railroad was named the Carson and Colorado to reflect the ambitions of its founders – to connect the mines and towns in the California and Nevada deserts from the Colorado River in the south to the Carson River in the north (Clements, 2016). However, the railroad was purchased by the Southern Pacific Railroad in 1900 for $2,750,000, and its name was changed to the California and Nevada Narrow Gauge Railroad (Clements, 2016).

In 1910, the Southern Pacific established the standard gauge Jawbone Branch, also known as the Mojave-Owenyo Branch, which extended from the community of Mojave in the south to the community of Owenyo in the north. A segment of the Mojave-Owenyo Branch is overlaps the eastern portion of the proposed project. Although the hey-day of the railroad was in the early 1900s when ores mining production was at its peak, the railroad operated as a freight and passenger transport until 1960 when service was discontinued (Clements, 2016). Prior to the construction of Highway 395, the railroad was the primary transportation network in the region.

Between 1904 and 1905, the Owens Valley was identified as a potential water source for Los Angeles, and former Los Angeles mayor Fred Eaton began buying land and water rights within the valley, purchased under the pretext of their use for a U.S. Reclamation Service irrigation project (LADWP, 2012; McCoy and Thomas, 1987). By 1908 construction of the Los Angeles Aqueduct, which runs from the Owens Valley in the north to the Los Angeles Basin in the south, began and was completed by 1913. Five thousand workers were employed during the construction of the 223 miles of 12-foot-diameter steel pipe (LADWP, 2012). A second phase of construction in the 1930s extended the Los Angeles Aqueduct 105 miles north of Bishop (LADWP, 2012).

Identification of Cultural Resources in the Project Site

To identify cultural resources within the proposed project area, archival research and a cultural resources survey were conducted. Archival research included: a records search conducted at the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) on July 18, 2018; a review of historic topographic maps and aerial photographs; a desktop geoarchaeological review; and a paleontological database records search conducted by the Los Angeles County Natural History Museum (LACM) on June 22, 2018.

EIC Records Search

The EIC records search conducted for the proposed project included a review of all previously recorded cultural resources and previous studies within the proposed project area plus a 0.5-mile radius. The records search results indicate seven cultural resources studies have been conducted within 0.5 miles of the proposed project. Approximately 15 percent of the 0.5-mile records search radius has been included in previous cultural resources surveys. None of the seven previous studies overlap the proposed project.

The EIC records search results indicate 44 cultural resources have been previously recorded within 0.5 miles of the proposed project including six historic-period archaeological sites, two historic-period built resources, five multicomponent archaeological sites, 27 prehistoric archaeological sites, three prehistoric isolates, and one historic-period isolate (**Table 3.4-1**).

TABLE 3.4-1
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary # (P-14-)	Permanent Trinomial (CA-INY-)	Description	Date Recorded	Distance from Project	NRHP/CRHR Eligibility
000035	35	Prehistoric archaeological site: seasonal habitation	1949; 1984; 1996	Within	Not evaluated
000068	68	Prehistoric archaeological site: camp site	1950	100 feet	Not evaluated
000069	69	Prehistoric archaeological site: camp site	1950	520 feet	Not evaluated
000081	81	Prehistoric archaeological site: camp site	1950	Within	Not evaluated
000082	82	Prehistoric archaeological site: camp site	1950	225 feet	Not evaluated
000083	83	Prehistoric archaeological site: camp site	1950	1,015 feet	Not evaluated
000084	84	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	2011	1,820 feet	Not evaluated
000085	85	Prehistoric archaeological site: seasonal habitation	1950	980 feet	Not evaluated
000086	86	Prehistoric archaeological site: camp site	1950	745 feet	Not evaluated
000087	87	Prehistoric archaeological site: seasonal habitation	1950	1,230 feet	Not evaluated
000110	110	Prehistoric archaeological site: camp site	1950	700 feet	Not evaluated
000157	157	Prehistoric archaeological site: camp site	1950	3,130 feet	Not evaluated
000304	304	Protohistoric archaeological site: camp site	1950	25 feet	Not evaluated
000307	307	Prehistoric archaeological site: seasonal habitation	1950	2,475 feet	Not evaluated
000308	308	Prehistoric archaeological site: camp site	1950	Within	Not evaluated
000309	309	Prehistoric archaeological site: camp site	1950	30 feet	Not evaluated
000310	310	Prehistoric archaeological site: camp site	1950	40 feet	Not evaluated
000315	315	Prehistoric archaeological site: camp site	1950	1,800 feet	Not evaluated
000316	316	Prehistoric archaeological site: camp site	1950	1,195 feet	Not evaluated
000317	317	Prehistoric archaeological site: camp site	1950	950 feet	Not evaluated
000318	318	Prehistoric archaeological site: camp site	1950	345 feet	Not evaluated

Primary # (P-14-)	Permanent Trinomial (CA-INY-)	Description	Date Recorded	Distance from Project	NRHP/CRHR Eligibility
004886	-	Historic-period built resource: Lone Pine Train Depot	1980	1,265 feet	Not evaluated
005649	5296/H	Historic-period archaeological site: refuse scatters	2006	1,060 feet	Not evaluated
005650	5297	Prehistoric archaeological site: seasonal habitation	1996	1,725 feet	Not evaluated
005651	5298	Prehistoric archaeological site: seasonal habitation	1996	575 feet	Not evaluated
005652	5299	Prehistoric archaeological site: lithic scatter	1996	1,630 feet	Not evaluated
005653	5300	Prehistoric archaeological site: seasonal habitation	1996	350 feet	Not evaluated
005654	5301	Prehistoric archaeological site: seasonal habitation	1996	460 feet	Not evaluated
005655	5302	Prehistoric archaeological site: lithic scatter	1996	3,120 feet	Not evaluated
005656	5303	Prehistoric archaeological site: lithic scatter	1996	430 feet	Not evaluated
005657	5304/H	Historic-period archaeological site: refuse scatter	1996	1,520 feet	Not evaluated
009224	-	Prehistoric isolate: two basalt flakes	2006	4,075 feet	Not evaluated
009225	-	Historic-period isolate: marble and sanitary can	2006	3,375 feet	Not evaluated
009226	-	Prehistoric isolate: one obsidian flake	2006	3,360 feet	Not evaluated
009227	7213	Historic-period archaeological site: refuse scatter	2006	580 feet	Not evaluated
009228	7214	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	2006	1,400 feet	Not evaluated
009229	7215	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	2006	850 feet	Not evaluated
009230	7216	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	2006	Within	Not evaluated
010992	8422	Historic-period archaeological site: refuse scatter	2011	4,975 feet	Recommended ineligible
010993	8423	Historic-period archaeological site: refuse scatter	2011	235 feet	Recommended ineligible
010994	8424	Historic-period archaeological site: refuse scatter	2011	1,080 feet	Recommended ineligible
011686	8999	Multicomponent archaeological site: prehistoric lithic scatter and historic-period ranching features	2010	500 feet	Not evaluated
011689	-	Prehistoric isolate: biface fragment	2010	3,000 feet	Not evaluated
012883	-	Historic-period built resources: transmission line	2014	Within	Recommended ineligible

The EIC records search indicates that eight previously recorded archaeological sites (P-14-000035 [prehistoric site], -000068 [prehistoric site], -000081 [prehistoric site], -000304 [protohistoric site], -000308 [prehistoric site], -000309 [prehistoric site], -000310 [prehistoric site], and -009230 [multicomponent site]) and one historic-period built resource (P-14-012883 [Owens Gorge Transmission Line]) are located within or immediately adjacent to (within 150 feet of) the proposed project.

Historic Maps and Aerial Photographs Review

Historic maps and aerial photographs were examined to provide historical information about land uses of the proposed project area. Available topographic maps include the 1907, 1919, and 1937 Mt. Whitney 30-minute quadrangles, and the 1958 Lone Pine 15-minute quadrangle. Historic aerial photographs were available for the years 1944, 1947, 1993, and 2010 (historicaerials.com, 2018).

The 1907, 1919, and 1937 topographic maps show the proposed project is bounded to the north and south by generally east-west trending roads corresponding to present day Lone Pine Narrow Gauge Road in the north and Highway 136 in the south. The Southern Pacific California and Nevada Narrow Gauge Railroad right-of-way is depicted east of the proposed project and the community of Lone Pine is indicated west of the proposed project. The 1919 and 1937 topographic maps show the north-south oriented Southern Pacific System Mojave-Owenyo Branch Railroad right-of-way bisects the western edge of the proposed project, and the Lone Pine Station is depicted approximately 0.25 miles west of the proposed project's northern boundary. The 1958 topographic map shows a cemetery approximately 0.40 miles west of the proposed project's northern portion. All of the topographic maps show that the river's course and channel remained relatively static from the early to the mid-20th century.

The historic aerial photographs largely depict what is shown by the topo maps: that the proposed project and its immediate vicinity has remained largely undeveloped with the exception of a railroad right-of-way and that the river's course and channel has not changed dramatically since the mid-20th century. The 1944 and 1947 aerial photographs show a number of dirt roads bisecting the terraces overlooking the river's flood plain. The 1993 and 2010 aerial photographs show the Lone Pine landfill located immediately west of the proposed project. The photographs also show the tracks have been removed from the Mojave-Owenyo Branch Railroad right-of-way with only the railroad bed remaining. The structures associated with the Lone Pine Station are still present in the 1993 and 2010 photographs.

In sum, the historic map and aerial review indicate development in the vicinity of the proposed project is largely associated with the Mojave-Owenyo Branch Railroad right-of-way, the remnants of which bisect the easternmost portion of the proposed project. The review also shows that the river's channel has remained largely unchanged since the early 20th century.

Geoarchaeological Review

A desktop geoarchaeological review was conducted for the proposed project and included a review of geologic maps, soil maps, and site records for the previously recorded prehistoric sites identified by the EIC records search.

The proposed is located along the Owens River, which has incised into the Owens Valley floor and occupies a fairly narrow meander belt that contains numerous meander scrolls, ox-bows and cut-off channels. Near surface deposits within the proposed project are mapped as Holocene-aged alluvium (CGS, 2018). Additional mapping by Meyer et al. (2010) provides further temporal resolution for the landforms, and suggests that terrace deposits on the west (right) bank of the Owens River floodplain date to the Late Holocene (4-2 thousand years ago [kya]) while deposits

on the east (left) bank date to the Latest Holocene (2-0.15 kya), and deposits within the floodplain are assigned to the historic and recent period.

Soils underlying in-channel proposed project components (i.e., portions of water trail, boat launch, put-in, occlusions, and spoils placement areas) are mapped as Torrifluvents-Fluvaquentic Endoaquolls complex (NRCS, 2018). Torrifluvents and Fluvaquentic Endoaquolls are typically dry floodplain soils (Buol et al., 1997). Although both soils form in alluvial parent material, they do so on slightly different landforms with Torrifluvents found on stream terraces and Fluvaquentic Endoaquolls found in floodplain depressions. Both soils are deep and with depth to restrictive features, such as bedrock or impassable strata, being greater than 80 inches (NRCS, 2018).

Proposed project elements extending onto the terraces adjacent to the floodplain (i.e., portions of trail, take-out, access roads, and staging areas) are underlain by soils mapped as Cajon-Mazourka-Eclipse complex and Mazourka-Eclipse complex (NRCS, 2018). All three series are very deep soils that form in alluvial parent material on landforms such as stream and lacustrine terraces (NRCS 2015a, 2015b, 2016). Cajon soils lack a recognized soil B-horizon, which suggests this soil is particularly youthful, consistent with a Holocene to recent age. Both Mazourka and Eclipse soils exhibit accumulated silicate clays (Bt-horizons), which may be consistent a Holocene time frame.

Based on geological, soils, and archaeological data, the proposed project is considered to have high sensitivity for buried, intact archaeological sites. The terraces overlooking the Owens River floodplain contain a number of previously recorded prehistoric and historic-period archaeological sites. Although most of these sites are surface manifestations, several prehistoric sites appear to contain subsurface components that have been exposed by road cutting (or looting) through eolian (windblown) sediments. The depth of recorded subsurface components generally exceeds 30 centimeters (approx. 12 inches), with a potential for more deeply buried archaeological resources. As noted above terrace deposits on the west (right) bank date to the Late Holocene (4-2 kya) while deposits on the east (left) bank date to the Latest Holocene (2-0.15 kya). The differential ages suggest there is a higher potential for preserved and buried archaeological sites along the east bank terrace since this area may contain buried remains dating through to the Latest Holocene, while cultural remains from the same period would have tended to remain unburied along the west bank and not as well preserved.

Very few archaeological sites have been previously recorded within the Owens River floodplain possibly due to thick vegetation obscuring the ground surface or to destruction by fluvial processes associated with flooding events and the meandering of the Owens River within the floodplain. Should subsurface archaeological deposits exist within the floodplain, they would have likely been disturbed and redeposited by recent fluvial processes, such as cut-and-fill meandering.

Cultural Resources Survey

A cultural resources survey for the proposed project was conducted on December 4 to 7, 2018. The survey was aimed at identifying surface evidence of archaeological resources and historic-period built resources within and immediately adjacent to (within 150 feet of) the proposed project. As a result of the survey, Forty-one cultural resources were documented or updated including five previously recorded archaeological sites (P-14-000035, -000068, -000081, -000308, and -000310), one previously recorded multicomponent archaeological site (P-14-009230), one previously recorded historic-period built environment resource (P-14-012883 [Owens Gorge 230 kV transmission line]), 23 newly recorded prehistoric archaeological sites (ESA-ORWT-Site-001P and ESA-ORWT-Site-006P through -027P), two newly recorded historic-period archaeological sites (ESA-ORWT-Site-002H and -004H), two newly recorded multicomponent archaeological sites (ESA-ORWT-Site-003M and -005M), two newly recorded historic-period built resources (ESA-ORWT-Built-028H and -29H), and five newly recorded prehistoric isolates (ESA-ORWT-ISO-001P through -005P). Two previously recorded prehistoric archaeological sites (P-14-000304 and -000309) could not be relocated during the survey.

Of the 41 resources documented or updated as a result of the survey, none of the thirty-three archaeological resources have been evaluated for inclusion in the NRHP or CRHR and therefore have the potential to qualify as historical resources pursuant to CEQA. Of the three historic-period built resources, one (P-14-012883; Owens Gorge 230 kV transmission line) has been previously evaluated and recommended ineligible for listing in the CRHR for lack of integrity, and, therefore, does not qualify as a historical resource pursuant to CEQA. The remaining two historic-period built resources, ESA-ORWT-Built-028H (Southern Pacific Railroad Mojave-Owenyo Branch alignment) and ESA-ORWT-Built-029H (two bridge abutments), have not been previously evaluated for listing in the CRHR and, therefore, have the potential to qualify as historical resources pursuant to CEQA. The five isolates (ESA-ORWT-ISO-001P, -002P, -003P, -004P, and -005P) documented as a result of the survey lack archaeological context and are not eligible for listing in the CRHR and therefore do not qualify as historical resources pursuant to CEQA. These resources are summarized below in **Table 3.4-2**.

TABLE 3.4-2 RESOURCE SUMMARY

Primary # (P-14-)	Permanent Trinomial (CA-INY-)	Temporary Identifier (ESA-ORWT-)	Resource Description	Newly Recorded/ Updated	NRHP/CRHR Eligibility
000035	35	-	Prehistoric archaeological site: artifact scatter	Updated	Not evaluated
000068	68	-	Prehistoric archaeological site: artifact scatter	Updated	Not evaluated
000081	81	-	Prehistoric archaeological site: artifact scatter	Updated	Not evaluated
000304	304	-	Prehistoric archaeological site: artifact scatter	Not relocated	Not evaluated
000308	308	-	Prehistoric archaeological site: artifact scatter	Updated	Not evaluated
000309	309	-	Prehistoric archaeological site: artifact scatter	Not relocated	Not evaluated
000310	310	-	Prehistoric archaeological site: artifact scatter	Updated	Not evaluated
009230	9230	-	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	Updated	Not evaluated

Primary # (P-14-)	Permanent Trinomial (CA-INY-)	Temporary Identifier (ESA-ORWT-)	Resource Description	Newly Recorded/ Updated	NRHP/CRHR Eligibility
012883	-	-	Historic-period built resource: Owens Gorge 230 kV Transmission Line	Updated	Recommended CRHR ineligible
-	-	Site-001P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-002H	Historic-period archaeological site: refuse scatter	Newly recorded	Not evaluated
-	-	Site-003M	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	Newly recorded	Not evaluated
-	-	Site-004H	Historic-period archaeological site: refuse scatter	Newly recorded	Not evaluated
-	-	Site-005M	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	Newly recorded	Not evaluated
-	-	Site-006P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-007P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-008P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-009P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-010P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-011P	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-012P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-013P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-014P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-015P**	Prehistoric archaeological site: artifact scatter	Newly recorded	Not evaluated
-	-	**Site-016P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-017P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-018P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-019P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-020P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-021P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-022P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	Site-023P	Prehistoric archaeological site: artifact scatter	Newly recorded	Not evaluated
-	-	**Site-024P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-025P**	Prehistoric archaeological site: lithic scatter	Newly recorded	Not evaluated
-	-	**Site-026P**	Prehistoric archaeological site: artifact scatter	Newly recorded	Not evaluated
-	-	**Site-027P**	Prehistoric archaeological site: artifact scatter	Newly recorded	Not evaluated
-	-	Built-028H	Historic-period built resource: Southern Pacific Mojave-Owenyo alignment	Newly recorded	Not evaluated
-	-	**Built-029H**	Historic-period built resource: two concrete bridge abutments	Newly recorded	Not evaluated
-	-	**ISO-001P**	Prehistoric isolate: one pieces of obsidian debitage	Newly recorded	Not eligible

Primary # (P-14-)	Permanent Trinomial (CA-INY-)	Temporary Identifier (ESA-ORWT-)	Resource Description	Newly Recorded/ Updated	NRHP/CRHR Eligibility
-	-	**ISO-002P**	Prehistoric isolate: one pieces of obsidian debitage	Newly recorded	Not eligible
-	-	**ISO-003P**	Prehistoric isolate: two pieces of obsidian debitage	Newly recorded	Not eligible
-	-	**ISO-004P**	Prehistoric isolate: one pieces of obsidian debitage	Newly recorded	Not eligible
-	-	**ISO-005P**	Prehistoric isolate: one pieces of obsidian debitage	Newly recorded	Not eligible

3.4.2 Regulatory Framework

Federal

National Historic Preservation Act

The principal federal law addressing historic properties is the National Historic Preservation Act (NHPA), as amended (54 United States Code of Laws [USC] 300101 *et seq.*), and its implementing regulations (36 CFR Part 800). Section 106 requires a federal agency with jurisdiction over a proposed federal action (referred to as an "undertaking" under the NHPA) to take into account the effects of the undertaking on historic properties, and to provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

The term "historic properties" refers to "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register" (36 CFR Part 800.16(*l*)(1)). The implementing regulations (36 CFR Part 800) describe the process for identifying and evaluating historic properties, for assessing the potential adverse effects of federal undertakings on historic properties, and seeking to develop measures to avoid, minimize, or mitigate adverse effects. The Section 106 process does not require the preservation of historic properties; instead, it is a procedural requirement mandating that federal agencies take into account effects to historic properties from an undertaking prior to approval.

The steps of the Section 106 process are accomplished through consultation with the State Historic Preservation Officer (SHPO), federally-recognized Indian tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR 800.1(a)). Consultation with Indian tribes regarding issues related to Section 106 and other authorities (such as the National Environmental Policy Act, or NEPA, and Executive Order No. 13007) must recognize the government-to-government relationship between the Federal government and Indian tribes, as set forth in Executive Order 13175, 65 FR 87249 (Nov. 9, 2000), and Presidential Memorandum of November 5, 2009.

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or

impairment" (36 CFR 60.2). The NRHP recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the NRHP is considered "historic property" under Section 106 of the NHPA.

To be eligible for listing in the NRHP, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The NRHP recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the NRHP unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity (U.S. Department of the Interior, 2002).

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (14 California Code of Regulations [CCR] section 15064.5) recognize historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR, (2) a resource included in a local register of historical resources, as defined in PRC subdivision 5020.1(k) or identified as

significant in a historical resource survey meeting the requirements of PRC subdivision 5024.1(g) and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact a resource does not meet the three criteria outlined above does not preclude the lead agency from determining the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines an archaeological site is a historical resource, then the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, then mitigation measures shall be required. The *CEQA Guidelines* note if an archaeological resource is neither a unique archaeological nor a historical resource, then the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* subdivision 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* subdivision 15064.5(a). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines* subdivision 15064.5(b)(1)). According to *CEQA Guidelines* subdivision 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

B. Account for its inclusion in a local register of historical resources pursuant to Subdivision 5020.1(k) of the PRC or its identification in a historical resources survey meeting the requirements of Subdivision 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. Convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Weeks and Grimer, 1995) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines subdivision 15064.5(b)(3)).

California Register of Historical Resources

The CRHR is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC subdivision 5024.1[a]). The criteria for eligibility for the CRHR are based upon NRHP criteria (PRC subdivision 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP;
- California Registered Historical Landmarks from No. 770 onward; and,

- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC section 5097.98 provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC section 5097.98 further requires the NAHC, upon notification by a county coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Local

Inyo County General Plan

The Inyo County General Plan, Conservation/Open Space Element (2013), contains the following cultural resources goals, policies, and implementation measures relevant to the proposed project:

> **Goal CUL-1:** Preserve and promote the historic and prehistoric cultural heritage of the County.
>
> > **Policy CUL-1.1: Partnerships in Cultural Programs.** Encourage and promote private programs and public/private partnership that express the cultural heritage of the area.

Policy CUL-1.2: Interpretive Opportunities. Support and promote the development of interpretive facilities, such as roadside kiosks, museums, and restored historic buildings that highlight the County's cultural resources.

Policy CUL-1.3: Protection of Cultural Resources. Preserve and protect key resources that have contributed to the social and economic history and prehistory of the area unless overriding circumstances are warranted.

Policy CUL-1.4: Regulatory Compliance. The County and private organization shall work with appropriate Native American groups when potential Native American resources could be affected by development proposals.

Implementation Measure 1.0: The County shall work in partnerships with private entities, other agencies, and educational institutions to support dissemination of knowledge of the historic and prehistoric past of the County. This may include acquisition of funding, promotion of festivals, and /or development of interpretive facilities.

Implementation Measure 2.0: The County should retain, and update to the extent possible, the existing survey of historic structures (prepared by IMACA and IMAGE).

Implementation Measure 3.0: If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

Implementation Measure 4.0: Native American groups shall be contacted at the preliminary stages of a project that may result in effects to Native American resources.

3.4.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to cultural resources in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant cultural resources impact would occur if the project would:

CUL-1 Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;

CUL-2 Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5; or

CUL-3 Disturb any human remains, including those interred outside of formal cemeteries.

CEQA provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource (PRC, section 21084.1). CEQA Guidelines, section 15064.5 defines a "substantial adverse change" in

the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be "materially impaired" (CEQA Guidelines subdivision 15064.5[b][1]).

CEQA Guidelines subdivision 15064.5(b)(2), defines "materially impaired" for purposes of the definition of "substantial adverse change" as follows:

The significance of a historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Subdivision 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Subdivision 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

CEQA also provides a project may cause a significant environmental effect where the project could result in damage to or destroy unique archaeological resources,[2] unique paleontological resource or site or unique geologic feature, or human remains. (Paleontological resources are evaluated in Section 3.5, Geology and Soils.)

Methodology

The following criteria from Appendix G of the *CEQA Guidelines* are used as thresholds of significance to determine the impacts of the proposed project as related to cultural resources. The proposed project would have a significant impact if it would:

1. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.
2. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5.
3. Disturb any human remains, including those interred outside of formal cemeteries.

[2] Per CEQA Guidelines subdivision 15064.5(c), when a project will impact an archaeological site, a lead agency shall first determine whether the site is a historical resource. If the archaeological site does not meet the criteria for historical resource, it will then be assessed for significance as a unique archaeological resource. If it meets the definition of unique archaeological resource, the provisions of section PRC subdivision 21083.2 shall apply.

3.4.4 Project Impacts

Historical Resources

Threshold CUL-1: The project would result in a significant impact if the project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

Impact Statement CUL-1: *The proposed project has the potential to cause a substantial adverse change in the significance of a historical resource. However, implementation of Mitigation Measures CUL-1 through CUL-8 would reduce potential impacts to less than significant.*

The cultural resource assessment conducted in support of the proposed project identified 41 cultural resources within and immediately adjacent to (within 150 feet of) the proposed project. These resources include three historic-period built resources (P-14-012883 [Owens Gorge 230 kV transmission line], ESA-ORWT-Built-028H [Southern Pacific Railroad Mojave-Owenyo Branch alignment], and ESA-ORWT-Built-029H [two bridge abutments), 33 archaeological sites (P-14-000035, -000068, -000081, -000308, -000310, and -009230; and ESA-ORWT-Site-001P, -002H, -003M, -004H, -005M, and -006P through -027P), and five prehistoric isolates (ESA-ORWT-ISO-001P through -005P).

Of the three historic-period built resources, one (P-14-012883; Owens Gorge 230 kV transmission line) has been previously evaluated and recommended ineligible for listing in the CRHR for lack of integrity, and, therefore, does not qualify as a historical resource pursuant to CEQA. The remaining two historic-period built resources, ESA-ORWT-Built-028H and -029H, have not been previously evaluated for listing in the CRHR and, therefore, have the potential to qualify as historical resources pursuant to CEQA. Resource ESA-ORWT-Built-028H consists of a segment the Southern Pacific Railroad Mojave-Owenyo Branch's earthen railroad bed. An existing dirt access road bisects the alignment and would be used during the in-channel phase of proposed project construction to access occlusions and staging areas within the Owens River floodplain. Given the access road is existing and no modifications would be made to the road as part of the proposed project, its use during the in-channel phase of project construction would not result in a significant impact to ESA-ORWT-Built-028H. No above ground project components would be constructed in the vicinity of ESA-ORWT-Built-028H and, therefore, no indirect visual impacts would occur as a result of proposed project implementation.

Resource ESA-ORWT-Built-029H consists of two poured concrete bridge abutments located on the southwestern and northeastern sides of the Owens River. The resource is located approximately 120 feet from where occlusions would be removed and approximately 360 feet from the proposed boat take-out facilities. Given that no proposed project components overlap ESA-ORWT-Built-029H, it would not be subject to direct impacts as a result of proposed project implementation. Additionally, no indirect visual impacts to ESA-ORWT-Built-029H are anticipated given the 360-foot distance between the resource and the nearest above-ground proposed project components.

Of the 33 archaeological resources, none have been previously evaluated for inclusion in the NRHP or CRHR and therefore have the potential to qualify as historical resources pursuant to CEQA. Of these 33 archaeological sites, 19 overlap existing dirt access roads (P-14-000081, -000310 and -009230; and ESA-ORWT-Site-006P, -007P, -008P, -009P, -010P, -011P, -012P, -013P, -014P, -015P, -017P, -019P, -020P, -023P, -025P, and -027P), and 14 are located immediately adjacent to existing dirt access roads (P-14-000035, -000068, and -000308; and ESA-ORWT-Site-001P, -002H, -003M, -004H, -005M, -016P, -018P, -021P, -022P, -024P, and -026P). These dirt roads would be used to access occlusions and staging areas during the in-channel phase of proposed project construction. The portions of the 19 archaeological sites that overlap the existing dirt access roads are already disturbed at the surface, and if all proposed project-related vehicles and equipment stay within the existing roadways no impacts to these 19 sites are anticipated. Similarly, for the 14 archaeological sites located immediately adjacent to the existing access roads, no impacts are anticipated as long all proposed project-related vehicles and equipment stay within the existing roadways. However, should vehicles and/or heavy equipment inadvertently leave the access roads where known sites are located, these actions could result in damage to the archaeological sites resulting in significant impacts.

In addition to overlapping an existing dirt access road, prehistoric archaeological site, P-14-000310, also overlaps a proposed equipment staging area. The staging area consists of an existing dirt road and graded pull out area. The portions of the site that overlap the existing dirt road and graded pull out area are already disturbed at the surface, and if all proposed project-related vehicles and equipment stay within the existing roadway and graded pull out area no impacts to P-14-000310 are anticipated. However, if proposed project-related vehicles and equipment were to inadvertently leave the existing road limits and graded pull out area, P-14-000310 could be damaged and the site could be significantly impacted as a result.

Five newly recorded isolates (ESA-ORWT-ISO-001P, -002P, -003P, -004P, and -005P) were documented as a result of the cultural survey. Due to their isolated nature and lack of clear cultural context, isolates are generally considered not to be significant resources. As such, the five isolates documented within the proposed project area do not qualify as historical resources pursuant to CEQA, and no further work is recommended for these resources.

In addition to the 33 known archaeological sites that may be impacted by the proposed project, unknown subsurface archaeological deposits may underlie the proposed project where ground disturbing activities would be carried out. The geoarchaeological review indicates the proposed project area is highly sensitive for the presence of subsurface archaeological deposits. Should unknown subsurface archeological deposits underlie the proposed project, they may qualify as historical resources pursuant to CEQA, and could be significantly impacted by proposed project ground disturbing activities.

The proposed project includes the implementation of a water trail to be used for recreational purposes by the general public. As such, the proposed project would increase the degree of vehicle and foot traffic especially in areas where people would congregate, namely the boat launch and take out locations. Although, no known resources are located in close proximity to the boat launch or take out locations, there are three known archaeological sites (P-14-000035, -

000068, and -000081) that are either bisected by or located immediately adjacent to the existing dirt road that would be used to access the boat take out. The increased recreational use in the vicinity of the three sites has the potential to result in indirect effects including long term degradation of the sites as a result of recreational users leaving the intended use areas, inadvertently wandering into archaeological sites, and purposeful looting and vandalism. Indirect effects may also occur as a result of recreational users leaving the designated recreational areas outside of the water trail and wandering into identified archaeological sites located on the margins of the flood plain including ESA-ORWT-Site-011P, -012P, -023P, -026P, and -027P.

Implementation of Mitigation Measures CUL-1 through CUL-8 would ensure the 33 known archaeological sites are not subject to direct or indirect impacts and would reduce potential significant impacts to unknown archaeological resources that could qualify as historical resources pursuant to CEQA. Implementation of these measures would reduce impacts to potential historical resources to less than significant.

Unique Archaeological Resources

Threshold CUL-2: The project would result in a significant impact if the project would cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5.

Impact Statement CUL-2: *The proposed project has the potential to cause a substantial adverse change in the significance of known and unknown archaeological resources that may qualify as unique archaeological resources. However, implementation of Mitigation Measures CUL-1 through CUL-8 would reduce potential impacts to less than significant.*

As noted above, the cultural resource assessment conducted in support of the proposed project identified 33 archaeological sites (P-14-000035, -000068, -000081, -000308, -000310, and -009230; and ESA-ORWT-Site-001P, -002H, -003M, -004H, -005M, and -006P through -027P) and five prehistoric isolates (ESA-ORWT-ISO-001P through -005P) within and immediately adjacent to the proposed project. The five isolates lack clear cultural context and do not qualify as unique archaeological resources pursuant to CEQA, and no further work associated with these isolates is recommended.

None the 33 archaeological sites have been evaluated for inclusion in the NRHP or CRHR and it is unknown whether they qualify as historical resources under CEQA. If they do not qualify as historical resources, they have the potential to qualify as unique archaeological resources. As noted above, these 33 archaeological sites overlap or are located immediately adjacent to existing access roads that will be used during the in-channel phase of proposed project construction. One resource, P-14-000310, also overlaps an existing graded pull out area that would be used as a staging area during proposed project construction. Should proposed project-related equipment inadvertently leave the existing road right-of-ways and/or the graded turnout of the proposed staging area, these actions could result in significant impacts to archaeological resources that have the potential to qualify as unique archaeological resources.

As noted above, the geoarchaeological reviews indicates the proposed project area is highly sensitivity for the presence of subsurface archaeological deposits. Should unknown subsurface archeological deposits underlie the proposed project, they may qualify as unique archaeological resources pursuant to CEQA, and could be significantly impacted by proposed project ground disturbing activities.

As noted above, the project would increase vehicle and foot traffic in the vicinity of archaeological sites, P-14-000035, -000068, and -000081, which could result in indirect effects including long term degradation of the sites as a result of recreational users leaving the intended use areas, inadvertently wandering into archaeological sites, and purposeful looting and vandalism. Indirect effects may also occur as a result of recreational users leaving the designated recreational areas outside of the water trail and wandering into identified archaeological sites located on the margins of the flood plain including ESA-ORWT-Site-011P, -012P, -023P, -026P, and -027P.

Implementation of Mitigation Measures CUL-1 through CUL-8 would ensure the 33 known archaeological sites are not subject to direct or indirect impacts and would reduce potential significant impacts to unknown archaeological resources that could qualify as unique archaeological resources pursuant to CEQA. Implementation of these measures would reduce impacts to potential unique archaeological resources to less than significant.

Human Remains

Threshold CUL-3: The project would result in a significant impact if the project would disturb any human remains, including those interred outside of formal cemeteries.

Impact Statement CUL-3: *The proposed project has the potential to disturb human remains, including those interred outside of formal cemeteries. However, implementation of Mitigation Measure CUL-9 would reduce potential impacts to less than significant.*

No known human remains exist within the proposed project vicinity. However, because the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. Implementation of Mitigation Measure CUL-9 would reduce potential impact to unknown human remains to less than significant.

3.4.5 Cumulative Impacts

Many of the projects within the geographic scope of the cumulative impacts analysis (see Table 3-2 in Section 3.4.5) have the potential to impact cultural resources including known and unknown cultural resources that may qualify as historical resources or unique archaeological resources pursuant to CEQA. It is assumed that the cultural resources within this geographic scope would be similar to those in the proposed project area. It is also expected that these projects would be or have been subject to analysis and review under Section 106 and/or CEQA, and that the potential affects to historical resources or unique archeological resources would be mitigated. As outlined above, potential impacts to known and unknown cultural resources that qualify as

historical resources or unique archeological resources would be less than significant with the implementation of Mitigations Measures CUL-1 through CUL-7. Therefore, the project would not contribute to a significant cumulative impact on cultural resources.

3.4.6 Mitigation Measures

Mitigation Measure CUL-1: Prior to the start of any ground disturbing activity associated with the proposed project**,** a Qualified Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2008) shall be retained by the County to carry out all mitigation measures related to archaeological resources.

Mitigation Measure CUL-2: Prior to any ground disturbing activities associated with the proposed project, the Qualified Archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The County shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-3: Prior to any ground disturbing activities associated with the proposed project, exclusionary fencing shall be installed to ensure that the 33 archaeological sites within or immediately adjacent to (within 150 feet of) the proposed project access roads are not inadvertently impacted during project implementation. For the 14 archaeological sites located immediately adjacent to proposed project access roads (P-14-000035, -000068, and -000308; and ESA-ORWT-Site-001P, -002H, -003M, -004H, -005M, -016P, -018P, -021P, -022P, -024P, and -026P), the exclusionary fencing shall encompass the mapped site boundaries plus a 10-foot radius to ensure an appropriate buffer is maintained between the sites and project-related ground disturbing activities. For the 19 archaeological resources bisected by project access roads (P-14-000081, -000310 and -009230; and ESA-ORWT-Site-006P, -007P, -008P, -009P, -010P, -011P, -012P, -013P, -014P, -015P, -017P, -019P, -020P, -023P, -025P, and -027P), the exclusionary fencing shall be established along the shoulder of the existing roads. For the portion of archaeological site P-14-000310 that overlaps the proposed staging area, the exclusionary shall be established along the margins of the graded pull out area to discourage inhibit access to the undisturbed portions of the site. To ensure avoidance, the exclusionary fencing shall be marked with signs indicating that staff associated with the proposed project are not to go beyond the limits of the fencing. The exclusionary fencing shall not identify the protected areas as demarcating archaeological resources in order to discourage unauthorized disturbance, vandalism, or collection of artifacts.

Mitigation Measure CUL-4: Prior to the start of ground disturbing activities associated with the proposed project, an archaeological monitor, working under the supervision of the Qualified Archaeologist, and a Native American monitor associated with a locally affiliated tribe, shall be retained to conduct monitoring of project-related ground-disturbing activities including installation of exclusionary fencing, excavations occurring within 50 feet of the 33 known archaeological resources, as well as the construction of all facilities associated with the boat launch and take-out. Based on observations of subsurface soil stratigraphy or other factors during initial ground disturbing activities, and in consultation with the County and Native American monitor, the Qualified

Archaeologist may modify monitoring as warranted if the Qualified Archaeologist determines that the sensitivity is contrary to what was predicted. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the Qualified Archaeologist at the completion of construction and shall be provided to the County and filed with the Eastern Information Center within six (6) months of project completion.

Mitigation Measure CUL-5: In the event of the unanticipated discovery of archaeological materials during project implementation, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by the Qualified Archaeologist. Construction shall not resume until the Qualified Archaeologist has conferred with the County and the Native American monitor on the significance of the resource. The Army Corps of Engineers shall also be notified and afforded the opportunity to determine whether the discovery requires addressing under Section 106 Post-Review Discoveries provisions provided in 36 CFR 800.13.

If it is determined that the discovered archaeological resource constitutes a significant resource, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the Qualified Archaeologist in consultation with the County and Native American monitor that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource.

Mitigation Measure CUL-6: The proposed signage to be installed at the boat launch and take out kiosks shall include language stating that all water trail users are to stay within the designated recreational areas of the water trail. The language shall also include interpretative information regarding the prehistory of the area, as well as definitions of site looting, vandalism, and pertinent public resources codes for the conviction of vandalism to archaeological resources including but not limited to PRC Sections 5097.993 and 5097.994 (Native American Historic Resource Protection Act), which establishes as a misdemeanor the removal or destruction of Native American archeological or historic sites on public or on private lands, punishable by a fine of up to $10,000 and/or imprisonment.

Mitigation Measure CUL-7: Provided this measures does not present a safety risk by limiting ingress and egress from the channel, woody debris removed from the Owens River channel during construction shall be placed at points where existing ranch and access roads bound the channel to discourage the ability of recreational users leaving the water trail and using the roads to access archaeological sites located on the margins of the Owens River floodplain and the adjacent terraces.

Mitigation Measure CUL-8: An annual site condition verification program shall be undertaken to document the condition of the three archaeological sites bisected by or located immediately adjacent to the existing dirt road that would be used to access the boat take out (P-14-000035, -000068, and -000081) as well as the five sites located on the margins of the Owens River floodplain (ESA-ORWT-Site-011P, -012P, -023P, -026P, and -027P). The site verification program shall be implemented by a qualified

archaeologist on an annual basis for the first three years of the project's use as a recreational water trail.

The goal of the annual site condition verification program is to monitor on an annual basis whether recreational use of the project area is indirectly impacting the eight archaeological sites identified above as a result of an increase in vehicle and foot traffic, inadvertent wandering into archaeological sites, purposeful looting and/or vandalism, and other disturbances that could be an inadvertent result of project operation. The results of the annual site condition verification shall be documented in a brief memorandum and shall include: confirmation of resource boundaries with sub-meter GPS; relocation of previously identified diagnostic artifacts and features; confirmation of locations, quantities, and types of artifacts present; general condition and disturbances observed; and photography to document whether any change in resource condition has occurred. California Department of Parks and Recreations (DPR) 523 form updates, following California Office of Historic Preservation's (OHP) *Instructions for Recording Historical Resources,* shall be prepared and filed with the Eastern Information Center for all resources where changes in setting or condition are observed.

If no impacts to archaeological sites are observed following the first three years, the annual site condition verification program may be discontinued. If the annual site condition verification program identifies impacts to archaeological sites resulting from project operations, or if, at any time, the County becomes aware of such impacts, additional protective measures shall be implemented immediately as recommended by the qualified archaeologist and in coordination with local Native American Tribes. If protective measures are implemented, annual verification of the measures' success shall be conducted for a period of three years.

Mitigation Measure CUL-9: If human skeletal remains are uncovered during Project construction, all work within 100 feet of the find will be immediately halted, and the Inyo County coroner will be contacted to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the County shall contact the California Native American Heritage Commission (NAHC), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC would then identify a Most Likely Descendant (MLD) of the deceased Native American, who would then help determine what course of action should be taken in the disposition of the remains.

Per PRC 5097.98, the landowner should ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

3.4.7 Level of Significance After Mitigation

With the implementation of Mitigation Measures CUL-1 through CUL-9, the project would result in less than significant impacts to cultural resources.

3.5 Geology and Soils

This section addresses the potential impacts to geology and soils associated with implementation of the project. The section provides a description of geologic conditions, a summary of applicable regulations related to geologic and seismic hazards, and an evaluation of the potential impacts that may result from implementing the proposed project.

3.5.1 Environmental Setting

Regional Climate

The climate in Owens Valley is greatly influenced by the Sierra Nevada, where precipitation primarily occurs from moisture-laden air-masses that originate over the Pacific Ocean and move eastward across the mountain range.[1] As detailed in Section 3.7, *Hydrology and Water Quality*, average precipitation at the valley floor is approximately five inches per year, which results in a semiarid to arid climate.

Regional Geology

The proposed project is located in Owens Valley, which occupies the western terminus of the Great Basin section of the Basin and Range Geologic Province.[2] The province is characterized by interior drainage with lakes and playas, and subparallel, fault-bounded ranges separated by basins.[3] The geomorphic province encompasses an area that extends along the eastern flank of the Sierra Nevada and north of the Mojave Desert Province, and covers portions of Mono, Inyo, Kern, and San Bernardino Counties. The Basin and Range Province is characterized by north-south trending fault-block mountain ranges (Sierra Nevada, Inyo Mountains, and Panamint Mountains), and elongated, relatively narrow valleys (Owens Valley, Panamint Valley, and Death Valley).

Inyo County is characterized by extremes in topography, including high mountain ranges contrasted with deep intervening valleys.[4] The Owens Valley is a long narrow valley between the Sierra Nevada Range to the west and the White and Inyo Mountains to the east.[5] The surrounding mountains rise more than 9,000 feet above the valley floor.[6] Between Big Pine and Owens Lake, the valley trends south-southeast. North of Big Pine the valley widens as the Sierra range front steps west, but it pinches closed at the north end of the White Mountains.[7] South of Owens Lake the valley is closed off by the Coso Range.

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1 Evaluation of the Hydrologic System and Selected Water-Management Alternatives in the Owens Valley, California, Danskin, 1998. United States Geologic Survey Water-Supply Paper 2370-H.

2 Owens Valley Land Management Plan, Los Angeles Department of Water and Power, 2010.

3 California Gemorphic Provinces: Note 36, California Geologic Survey, 2002

4 Inyo County General Plan Public Safety Element, Inyo County, 2001. Available: http://inyoplanning.org/general_plan/goals.htm. Accessed October 25, 2018.

5 Owens Valley Land Management Plan, Los Angeles Department of Water and Power, 2010.

6 Owens River Water Trail Project Geomorphic Assessment, Environmental Science Associates, 2018b. Appendix C.

7 The Owens Valley Fault Zone, Eastern California, and Surface Faulting Associated with the 1872 Earthquake, United States Geological Survey, 1982. Available: https://pubs.usgs.gov/bul/1982/report.pdf. Accessed October 25, 2018.

The Owens Valley is characterized by nearly level lake plain and basin floor and gently to moderately sloping alluvial fans punctuated by moderately steep to steep ranges including Poverty and the Alabama Hills.[8] The valley is dominated by the Owens Lake bed, which, prior to water diversion, was a standing lake 12 miles long by 8 miles wide and fed by the Owens River. During the Pleistocene era the lake extended to the Rose Valley and Indian Wells Valley near Ridgecrest, located approximately 67 miles south of the proposed project.

Local Geology, Soils, and Erosion

The proposed project would extend along a 6.3-mile long segment of the Lower Owens River between Lone Pine Narrow Gauge Road at the north and Highway 136 at the south, just east of Lone Pine, California in the Sierra Nevada range. The project area is relatively flat, with a floodplain that varies in width from 0.12 to 0.33 miles (approximately 634 to 1,742 feet) and is dominated by floodplain vegetation communities.

As shown on **Figure 3.5-1,** *Soils Map***,** soils within the project area consist primarily of the Torrifluvents-Fluvaquentic Endoaquolls complex, and smaller portions of the Cajon-Mazourka-Eclipse complex, Mazourka-Eclipse complex, and Torrifluvents.[9] A soil complex consists of two or more dissimilar soils in a regularly repeating pattern on the landscape that cannot be shown separately on soil surveys. **Table 3.5-1, Soil Types in the Project Area,** further describes the soils types that exist within the project area.

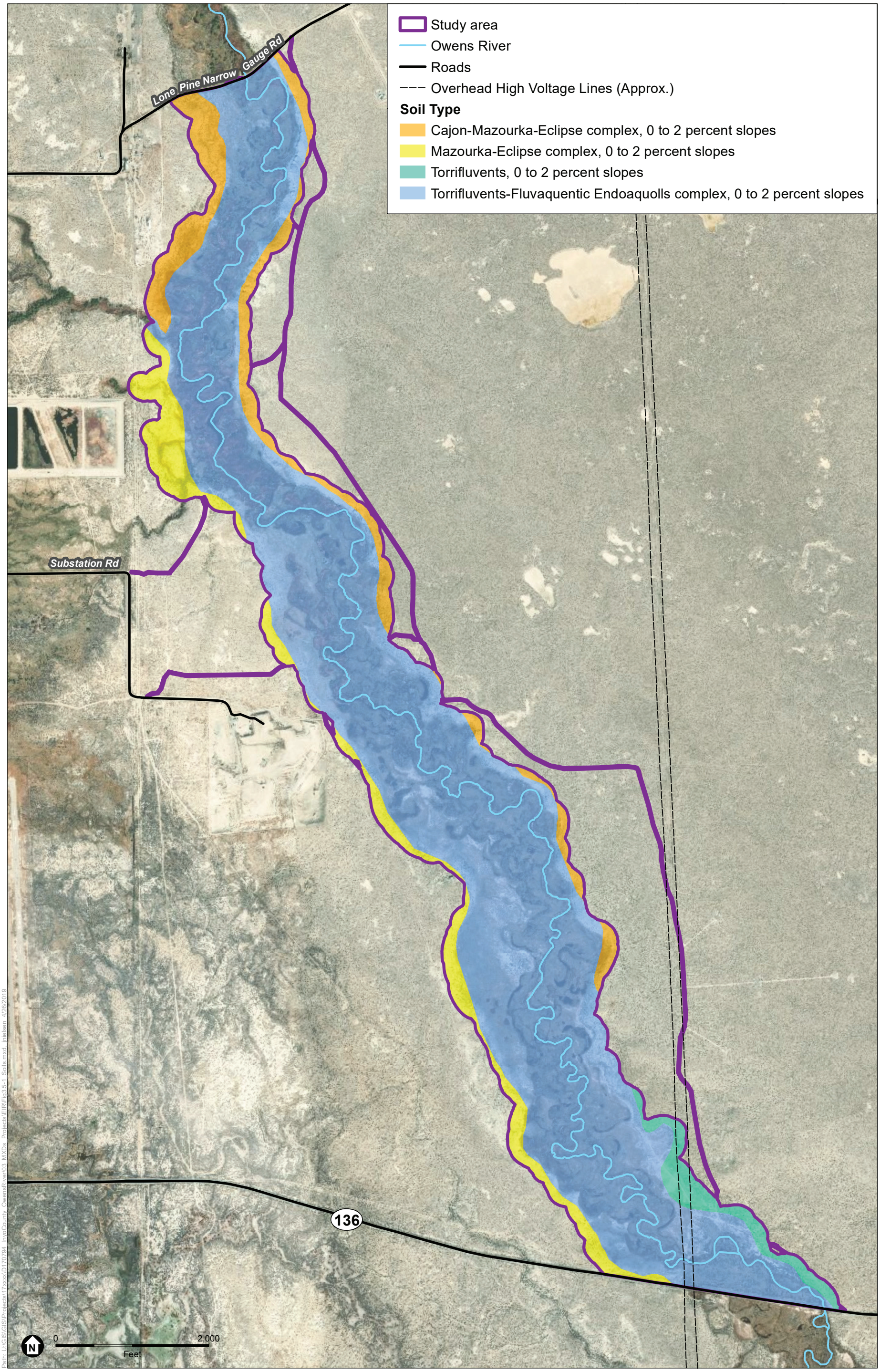
TABLE 3.5-1
SOIL TYPES IN THE PROJECT AREA

Soil Type	Parent Material	Texture	Natural Drainage Class	Common Location	Slope
Torrifluvents-Fluvaquentic Endoaquolls Complex	Alluvium derived from mixed sources	Loam, silty clay loam, fine sandy loam, loamy sand, fine sand, silt loam	Somewhat poorly drained to poorly drained	Stream terraces, depressions	0-2 percent
Cajon-Mazourka-Eclipse Complex	Alluvium derived from mixed sources	Sand, loamy sand, sandy loam, sandy clay loam, stratified coarse sand	Somewhat excessively drained, well drained	Stream terraces, lake terraces	0-2 percent
Mazourka-Eclipse Complex	Alluvium derived from mixed sources	Sand, sandy loam, sandy clay loam, stratified coarse sand	Well drained, somewhat excessively drained	Stream terraces, lake terraces	0-2 percent
Torrifluvents	Alluvium derived from mixed sources	Loam, silty clay loam, fine sandy loam	Somewhat poorly drained	Stream terraces	0-2 percent

Source: USDA 2018

[8] Owens River Water Trail Project Cultural Resources Assessment Report, Environmental Science Associates, 2018a. Appendix F.

[9] Natural Resource Conservation Service: Web Soils Survey, United States Department of Agriculture, 2018. Available: https://websoilsurvey.nrcs.usda.gov/app/. Accessed October 25, 2018.



SOURCE: DigitalGlobe 11/3/2017; Web Soil Survey, 2018; ESA, 2019.

Owens River Water Trail

Figure 3.5-1
Soils

ESA

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Based on the Geomorphic Assessment, which is provided in Appendix C, bed sediment material samples were collected that found that the upstream and downstream end of the project reach are characterized by a similar particle size distribution, which is mostly sand and gravel. Based on periodic probing of the channel bed, there appears to be a consistent layer of fine and organic material approximately 12 to 18 inches in depth, overlying a more sandy-fine gravel layer.

As a result of both natural and anthropogenic processes, the project area is determined to be a stable, low-gradient stream system with a relatively low sediment supply and transport potential. Anthropogenic changes have reduced the flow of Owens River, including upstream reservoirs (Pleasant Valley Reservoir built in 1954 and Tinemaha Reservoir built in 1962) and the Los Angeles Aqueduct (aqueduct). The aqueduct has an intake point (where water is transferred from the Owens River to the aqueduct) approximately 26 miles upstream of the project area. These changes have resulted in reduced inputs of flow and sediment to the project area, and subsequently have reduced the potential for lateral migration (erosion), sediment deposition, and other processes that characterize more dynamic systems.

Faulting and Seismicity

The California Geologic Survey (CGS) classifies active faults (or Alquist-Priolo faults) as those that have, or are suspected to have, ruptured within the Holocene epoch, which is within the last 10,000 to 12,000 years. The CGS classifies potentially active faults as those that have evidence of activity within the Quaternary period (last 1.6 million years), but give no indication of Holocene seismic events.

The geologic forces that helped shape Inyo County are also responsible for the numerous faults traversing the valleys and mountain ranges.[10] Extensive fault systems run along the bases of mountain ranges and throughout the ranges themselves. Twelve major Alquist-Priolo faults are located in Inyo County.[11] The nearest active fault to the project area is the Owens Valley Fault, which is located approximately one mile west of the project area.[12] The Owens Valley Fault is capable of generating an earthquake of a magnitude of 8.0 or greater.[13]

The fault's southerly extent is located near Owens Lake, and stretches north through Lone Pine and follows the floor of the Owens Valley northward to the Poverty Hills, where it steps to the northwest across Crater Mountain and through Big Pine.

[10] Inyo County General Plan Public Safety Element, Inyo County, 2001. Available: http://inyoplanning.org/general_plan/goals.htm.

[11] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

[12] Regulatory Maps Geo Application: Earthquake Fault Zones, California Geologic Survey, 2016. Available: http://maps.conservation.ca.gov/cgs/EQZApp/. Accessed October 29, 2018.

[13] The Owens Valley Fault Zone, Eastern California, and Surface Faulting Associated with the 1872 Earthquake, United States Geological Survey, 1982. Available: https://pubs.usgs.gov/bul/1982/report.pdf. Accessed October 25, 2018.

Expansive Soils

Expansive soils are types of soils that shrink or swell as the moisture content decreases or increases. Structures built on these soils may experience shifting, cracking, and breaking damage as soils shrink and subside or expand. According to the Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, expansive soils are not prevalent in the county and are not an applicable hazard in the area.[14]

Liquefaction

Liquefaction occurs when loosely packed sand or silt is saturated with water and then shaken hard enough for it to temporarily behave like a fluid. The primary factors that influence the potential for liquefaction include the soil type (specifically loose, granular sediment typically from beach and stream deposits), groundwater table elevation and the saturation of sediment, and the intensity and duration of ground shaking.[15] Despite very low precipitation levels in the region, Inyo County is at risk for liquefaction.[16] Since the project area is located along Owens River, water has percolated into the ground, which increases liquefaction risks.

Landslides and Slope Stability

A landslide occurs when the soils of a slope, such as a hillside or mountain, become unstable and collapse.[17] Natural factors, such as fractured or weathered bedrock, erosion, earthquake activity, and fire, as well as human alteration of topography and water content, cause landslides or slope instability. Landslides can be triggered by many different types of events, but earthquakes and moisture are the most common. The shaking of an earthquake or loss of soil stability as a result of earthquake-induced liquefaction can cause soil to slide. While the Basin and Range province is susceptible to moisture-induced debris flows and flash floods, the project area is a broad, relatively flat basin floor that lacks steep mountain canyons, making landslides low risk in the project area.

Another type of ground failure and cause of slope instability is lateral spreading. Lateral spreading can occur on alluvial fans and other liquefaction-prone soils when liquefied soils become sufficiently fluid to spread across fairly shallow slopes. As the project area has liquefaction prone soils, shallow slopes, and surface water (Owens River), the project area is at risk for lateral spreading.

Land subsidence or collapse is the gradual settling or sudden sinking of the surface owing to subsurface movement of earth material. The principal causes are aquifer-system compaction,

[14] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

[15] Factors of Liquefaction, United States Geological Survey, 2006. Available: https://geomaps.wr.usgs.gov/sfgeo/liquefaction/factors.html. Accessed October 29, 2018.

[16] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

[17] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

underground mining, oil and gas extraction, sinkholes, and thawing permafrost. As detailed in Section 3.7, *Hydrology and Water Quality*, of this EIR, the Los Angeles Department of Water and Power pumps groundwater from the Owens Valley groundwater basin. However, groundwater levels are monitored to limit over pumping. Due to monitoring of groundwater and lack of underground mineral, oil, or gas extraction, the project area would not be at risk of land subsidence.

Paleontological Setting

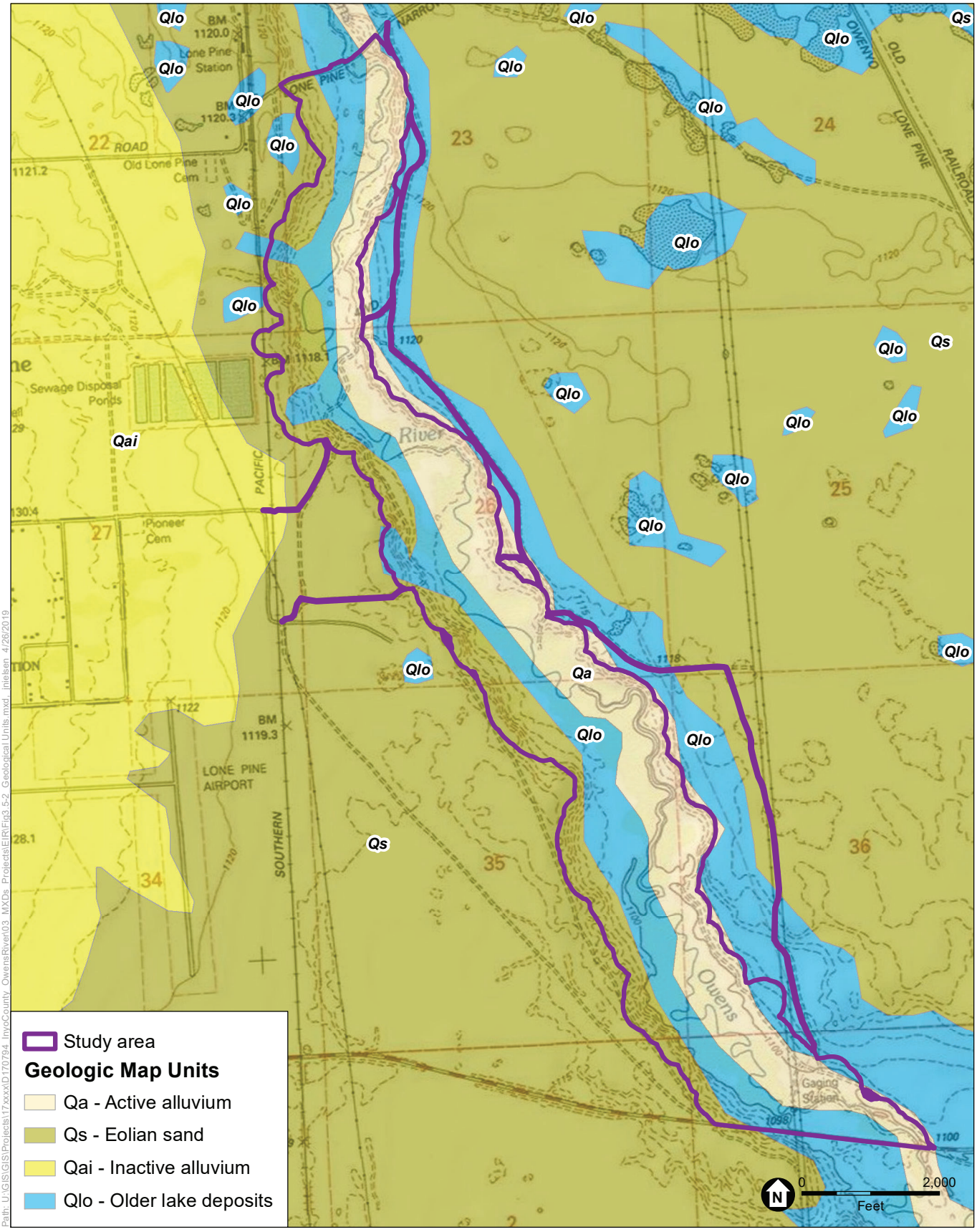
The geology of the proposed project area consists of Holocene to Pleistocene-aged lake sediments, deposited during the wetter climate the region experienced at the end of the last Ice Age. These sediments have been covered with more recent alluvium and eolian sands and cut into by the Owen's River.[18] Three geologic units are mapped on the surface of the proposed project area and include: active alluvium (mapped as Qa), eolian sands (mapped as Qs), and older lake deposits (mapped as Qlo) (**Figure 3.5-2**).

As depicted in Figure 3.5-2, active alluvium (Qa) is mapped at the surface within the Owens River floodplain. These are young sediments that date to the Holocene (0 – 11,700 years ago) and consist of sand to coarse gravel in active washes. These sediments are generally too young to preserve fossil resources (defined by the SVP as over 5,000 years in age), and so have low paleontological sensitivity.[19] However, throughout the proposed project area these sediments increase in age with depth, and likely overlie older lake deposits that have high paleontological sensitivity. While the exact depth at which the transition to older, high sensitivity sediments is not known in the proposed project area, it is likely to be as shallow as 5 feet in depth, as indicated by the proximity of older lake deposits at the surface.

As depicted in Figure 3.5-2, eolian sand (Qs) is mapped at the surface on the eastern and western terraces overlooking the floodplain. These sediments comprise a young sedimentary unit that dates to the Holocene (0 – 11,700 years ago) and consists of plant-stabilized sand sheets. Like the active alluvium described above, these sediments are too young to preserve fossil resources, but overlie older lake deposits that have high sensitivity. Deflation, which results in the thinning of deposits, has been noted in the central Owen's Valley where older lake deposits crop out within the sand units, as mapped in the proposed project area. While the exact depth at which the transition to older, high sensitivity sediments is not known in the proposed project area, it is likely to be as shallow as 5 feet in depth, as indicated by the proximity of older lake deposits at surface.

[18] Stone, P., G. Dunne, J. Moore, and G. Smith. 2000. *Geologic map of the Lone Pine 15-minute Quadrangle, Inyo County, California*. U.S. Geological Survey, Geologic Investigations Series Map I-2617. Scale 1: 62,500.

[19] Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Electronic resource, http://www.vertpaleo.org/Impact_Mitigation_Guidelines.htm, accessed November 1, 2018.



SOURCE: USGS 7.5' Topo Quad Lone Pine 1979; National Geologic Map Database

Owens River Water Trail

Figure 3.5-2
Geological Units

ESA

Path: U:\GIS\GIS\Projects\17xxxx\D170794 InyoCounty OwensRiver\03 MXDs Projects\EIR\Fig3.5-2 Geological Units.mxd jnielsen 4/26/2019

As depicted in Figure 3.5-2, older lake deposits (Qlo) are mapped at the surface within the Owens River floodplain and where not mapped at surface underlie more surficial active alluvium (Qa) and eolian san (Qs) across the project area. These deposits date to the Holocene – Pleistocene (2.58 million years ago to present), and are likely old enough to preserve fossil resources (i.e., over 5,000 years).[20] These deposits consist of massive to well-bedded light tan silt and sand deposited in an expanded Owens Lake. From the Pliocene into relatively recent times (early Holocene), the Owens Valley region was part of a chain of large lakes extending from Reno in the north to Death Valley in the south, which resulted from the much wetter climate in the region at the time.[21] Fine-grained lake sediments, such as those present in the proposed project area, are known to preserve fossils, including abundant mollusk and fish fossils.[22,23]

LACM Records Search

The LACM records search indicates a number of fossil localities have been previously documenting in the proposed project vicinity within older lake bed deposits (Qlo).[24] The closest fossil locality in these deposits is immediately south of the proposed project area, where Highway 136 crosses the Owens River, and produced fossil specimens of lion (*Felis concolor*) and an unidentified elephant. Approximately three miles southeast of the proposed project, on the northern margin of historic Owens Lake, four fossil localities produced fossil specimens of bony fish (Teleostei), bird (Aves), jackrabbit (*Lepus*), pocket gopher (*Thomomys*), and even-toed ungulate (Artiodactyla). To the west of these localities, an additional three fossil localities produced a suite of fossil vertebrates including suckers (*Catostomus fumeiventris* and *Chasmistes*), chub (*Siphateles bicolor*), legless lizard (*Anniella pulchra*), wigeon (*Anas americana*), scaup (*Aythya marila*), gulls (*Larus californicus* and *Larus canus*), quail (*Callipepla californica*), loon (*Gavia*), coot (*Fulica americana*), rail (*Rallus crepitans*), pelican (Pelecaniformes), grebes (*Podiceps auritus* and *Podiceps nigricollis*), wolf (*Canis lupus*), bobcat (*Lynx rufus*), jackrabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus*), meadow vole (*Microtus californicus*), packrat (*Neotoma*), deer mouse (*Peromyscus californicus*), pocket gopher (*Thomomys*), pocket mouse (*Perognathus longimembris*), house mouse (*Mus*), pronghorn antelope (*Capromeryx arizonensis*), and deer (*Cervus*).

[20] Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Electronic resource, http://www.vertpaleo.org/Impact_Mitigation_Guidelines.htm, accessed November 1, 2018.

[21] Reheis, M., S. Sine, and A. Sarna-Wojcicki. 2002. *Drainage Reversals in Mono Basin During the Late Pliocene and Pleistocene*. GSA Bulletin 114:991–1006.

[22] Gobalet, K. and R. Negrini. 1992. Evidence for Endemism in Fossil Tui Chub, *Gila bicolor*, from Pleistocene Lake Chewaucan, Oregon. Copeia 1992: 539-544.

[23] Hershler, R., and A. Jayko. 2009. A Mactrid Bivalve from Pleistocene Deposits of Lake Russell, Mono Basin, California. *Journal of Paleontology* 83:496–499.

[24] McLeod, S. 2018. P*aleontological Records Search for the proposed Owens River Water Trail Project, Project #D170794.00*, near Lone Pine, Inyo County, Project Area. Records search prepared by the Los Angeles County Natural History Museum for Environmental Science Associates.

3.5.2 Regulatory Framework

Federal

Earthquake Hazards Reduction Act

The U.S. Congress passed the Earthquake Hazards Reduction Act in 1977, which created the National Earthquake Hazards Reduction Program (NEHRP). The purpose of the NEHRP is to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." The principle behind NEHRP is that earthquake-related losses can be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The following four federal agencies contribute to earthquake mitigation efforts and have been designated as NEHRP agencies: the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF), and the U.S. Geological Survey (USGS).

Federal Occupational Safety and Health Administration Regulations

The Occupational Safety and Health Administration's (OSHA) Excavation and Trenching standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Section 2690-2699.6) was adopted to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating ground failure caused by strong earthquakes, namely liquefaction and slope failure. The Seismic Hazards Mapping Act requires the State Geologist to delineate seismic hazard zones, also known as "zones of required investigation", where regional information suggests that the probability of a hazard requiring mitigation is adequate to warrant a site-specific investigation (including Alquist-Priolo earthquake fault zones, liquefaction zones, and landslide zones). The fact that a site lies outside a zone of required investigation does not necessarily mean that the site is free from seismic or other geologic hazards. Where a project—defined by the act as any structures for human occupancy or any subdivision of land that contemplates the eventual construction of structures for human occupancy—is within a zone of required investigation, lead agencies must apply minimum criteria for project approval. As the project would not include structures for human occupancy or eventual construction of structures for human occupancy, the project would not be required to have a site-specific investigation related to the Seismic Hazards Mapping Act.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all building and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council. The code is updated triennially, and the 2016 edition of the CBC was published by the California Building Standards Commission on July 1, 2016, and took effect in January 1, 2017. The 2016 CBC contains California amendments based on the *American Society of Civil Engineers Minimum Design Standard ASCE/SEI 7-16*, Minimum Design Loads for Buildings and Other Structures, provides requirements for general structural design and includes means for determining earthquake loads[25] as well as other loads (such as wind loads) for inclusion into building codes. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in-accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

California Occupational Safety and Health Administration Regulations

Occupational safety standards exist in federal and State laws to minimize worker safety risks from both physical and chemical hazards in the work place. In California, the California Division of Occupational Safety and Health (Cal/OSHA) and the federal OSHA are the agencies responsible for ensuring worker safety in the workplace. The OSHA Excavation and Trenching standard (29 CFR 1926.650), covers requirements for excavation and trenching operations, which are among the most hazardous construction activities. Cal/OSHA is the implementing agency for both state and federal OSHA standards. All contractors are required to comply with OSHA regulations.

National Pollutant Discharge Elimination System Construction General Permit

Construction associated with the proposed program may disturb more than one acre of land surface affecting the quality of stormwater discharges into waters of the U.S. If ground disturbance is greater than one acre of land, the proposed project would therefore be subject to the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants (including

[25] A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

sediment) in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices designed to prevent sediment and pollutants from contacting stormwater from moving offsite into receiving waters. Routine inspection of all best management practices is required under the provisions of the Construction General Permit.

The SWPPP must be prepared before the construction begins. The SWPPP must list best management practices (BMPs) and the placement of those best management practices that the project proponent would use to protect stormwater runoff from pollutants, including sedimentation from ground disturbing activities or from erosion. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of best management practices, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of best management practices to reduce pollutants in stormwater discharges from the site following construction).

California Public Resources Code (PRC) Section 5097.5

PRC Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244 prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

Society for Vertebrate Paleontology

The Society for Vertebrate Paleontology (SVP) has established standard guidelines for acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional paleontologists in the nation adhere closely to the SVP’s assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California State regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontological Resources," the SVP (1995) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

> **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Also classified as significant are areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways.
>
> **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
>
> **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
>
> **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontological potential of the rock units present within the study area.

Local

Inyo County General Plan

The Inyo County General Plan was adopted by the Inyo County Board of Supervisors on December 11, 2001. The General Plan provides the County with a consistent framework for land use decision making, guiding future development within the County. The 2001 Public Safety Element of the Inyo County General Plan seeks to minimize exposure to hazards and structural

damage from geologic and seismic conditions. The County is currently in the process of updating the General Plan and the Draft General Plan Update was released in 2013.

The Public Safety Element contains the following goal and policy related to geologic and seismic hazards that are applicable to the project:[26]

> **Goal GEO-1:** Minimize exposure to hazards and structural damage from geologic and seismic conditions.
>
> > **Policy GEO-1.1:** Restrict development of inhabitable structures in areas that are subject to severe geologic hazards, such as Alquist-Priolo Special Studies Zone, liquefaction zones, landslide areas, and seismically induced unstable soils.

The Conservation/Open Space Element of the 2001 General Plan seeks to maintain the productivity of Inyo County's soils, in addition to recognizing development limitations of soil types in review and approval of future development projects. The Conservation/Open Space Element includes the following goal and policies regarding soil and erosion that are applicable to the project:

> **Goal S-2:** Recognize development limitations of soil types in review and approval of future development projects to protect public health and safety.
>
> > **Policy S-2.1:** Soil Erosion. Minimize soil erosion from wind and water related to new development.
> >
> > **Policy S-2.3:** Soil Instability. In areas of unstable soils and/or steep terrain, the County shall limit the intensity of development in order to minimize the potential for erosion and landform instability.

3.5.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to geology and soils in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant geology and soils impact would occur if the project would:

> **GEO-1** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- **GEO-1.a** Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
- **GEO-1.b** Strong seismic ground shaking
- **GEO-1.c** Seismic-related ground failure, including liquefaction

[26] The General Plan Update that is currently underway does not result in changes to the Public Safety Element and Conservation/Open Space Element goals and policies that are applicable to the project.

- **GEO-1.d** Landslides

GEO-2 Result in substantial soil erosion or the loss of topsoil;

GEO-3 Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on-site or offsite landslide, lateral spreading, subsidence (i.e., settlement), liquefaction, or collapse;

GEO-4 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or

GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

As detailed in the Initial Study (refer to Appendix A of this EIR), the project would result in a less than significant impact regarding **GEO-1.a** and **GEO-1.b**, and a no impact regarding **GEO-1.d** and **GEO-5**. For a brief discussion on why this issue was not further evaluated in this section, refer to Chapter 5, Other CEQA Considerations, of this EIR.

Methodology

Geologic and seismic information for the project area was derived from various sources and compiled in this chapter to develop a comprehensive understanding of the potential constraints and hazards associated with construction and operation of the project. Information sources include the USGS and CGS, Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, the Inyo County General Plan, and the Owens River Water Trail Project Geomorphic Assessment (Appendix C), all of which reflect the most up-to-date understanding of the regional geology and seismicity.

The following analysis takes into consideration all project components detailed in Chapter 2, *Project Description*. Proposed components include activities both within the river, including removal of occlusions within the river corridor, construction of a boat launch facility and boat take-out facility and their associated launch access points and all-weather surface walking paths. Proposed components also include activities upland from the river away from the water's edge, including construction of a vault restroom and trash receptacles area, all-weather surface access roads and roadway turnaround areas, and parking areas.

3.5.4 Project Impacts

Ground Failure

Threshold GEO-1.c: The project would result in a significant impact if the project would directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

Impact Statement GEO-1: *While the project site is located in an area with liquefaction risk, the project would comply with applicable requirements related to seismic-related ground failure. Therefore, impacts would be less than significant.*

As detailed above, despite very low precipitation levels in the region, Inyo County is at risk for liquefaction.[27] Since the project area is located along Owens River, water has percolated into the ground, which increases liquefaction risks in the project area. The proposed project would remove vegetation from Owens River. In addition, the project would result in the development of a launch and take-out area that would include all-weather surface driveways and roadway turnaround areas as well as pre-fabricated vault toilets, trash receptacles, and weather-resistant interpretative and safety sign kiosk. Development of the roadways and installation of the structures would be required to comply with CBC regulations and would adhere to standard engineering and construction practices. Chapter 18 of the CBC regulates soil conditions (including liquefaction), geotechnical investigations, grading, and the construction of foundations. Standard practices to reduce the risk of liquefaction include, but are not limited to, reinforcement of fine grained soils, stabilization of subsurface voids by injecting aggregate grout, and compaction to densify soils. Conformance with applicable regulations would ensure that people or structures would not be exposed to substantial adverse effects involving seismic ground-related failure, including liquefaction. Therefore, impacts related to liquefaction would be less than significant.

Soil Erosion/ Loss of Topsoil

Threshold GEO-2: The project would result in a significant impact if the project would result in substantial soil erosion or the loss of topsoil.

Impact Statement GEO-2: *In-channel vegetation and soil removal would disturb the channel bottom, potentially increasing sedimentation and erosion within the river. With implementation of Mitigation Measure HYD-1a and HYD-2, impacts related to erosion would be reduced to less than significant.*

Water Trail

The project area is located along an approximately 6.3-mile portion of the Owens River, which is a stable, low-gradient stream system with a relatively low sediment supply and transport potential.[28] Anthropogenic changes, such as upstream reservoirs (Pleasant Valley Reservoir and

[27] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

[28] Owens River Water Trail Project Geomorphic Assessment, Environmental Science Associates, 2018b. Appendix C.

Tinemaha Reservoir) and the Los Angeles Aqueduct have resulted in reduced inputs of flow and sediment to the project area, and subsequently have reduced the existing potential for erosion. The project would include the clearing of vegetation and removal of sediments from the channel to establish a single continuous navigable waterway. As detailed in Chapter 2, *Project Description*, construction associated with the water trail would involve three types of activities: 1) clearing of emergent vegetation to a width of approximately 15 feet; 2) relocation of large woody debris; and 3) removal of sediments from side channels or abandon the dominate channel to establish a single continuous navigable waterway. In total, in-channel excavation is expected to result in up to approximately 5,200 cubic yards (cy) of spoils material, which would most likely consist of a mixture of organic debris (e.g., tubers, roots, and shoots of tules), muck, and bedload. Spoils would be transported to the spoils placement areas using existing dirt ranch roads along the river as shown in Figure 2-3, Proposed Project Overview.

Because disturbance within and adjacent to the river channel would be greater than one acre, channel widening and vegetation clearing activities would require compliance with NPDES Construction General Permit criteria, including implementation of a SWPPP. The SWPPP would detail various BMPs that would be implemented during construction to control erosion, reduce sedimentation and the transport of soils, and ensure that the channel's water quality is not degraded. BMPs within or adjacent to rivers may include, but are not limited to, temporary channel crossings to avoid disturbance from construction equipment in the channel areas. The SWPPP would also require post-construction BMPs to stabilize any disturbed areas adjacent to the channel following construction activities to avoid erosion and sedimentation. Nevertheless, removing vegetation and sediment from the river would disturb bottom sediments, and could result in a substantial temporary increase in sediment and organics loading to the river. As detailed within Section 3.7, *Hydrology and Water Quality*, Mitigation Measure HYD-1a would include in-channel measures to minimize pollution and sediment loading during construction and maintenance.

Spoils would be placed in wind-rows (i.e., small berms) or in landforms shaped to blend in to existing terrain (i.e., "contoured"). Spoils would be placed in such a manner to minimize interference with existing drainage patterns and minimize erosional impacts – that is, outside of existing minor channels and away from the main channel of the Lower Owens River and, additionally, outside of the seasonal high flow inundation area. Existing vegetation will act as a natural filter strip and will act to further limit overland sediment movement during major storm events. Nonetheless, as described in Section 3.7, *Hydrology and Water Quality,* implementation of Mitigation Measure HYD-2 would be required in order to ensure that potential impacts associated with erosion and siltation are minimized. The BMPs listed in Mitigation Measure HYD-2 would also satisfy the requirements of the state Construction General Permit SWPPP. This measure would minimize erosion-related impacts by implementing specific best management practices to minimize erosion of spoils. With the implementation of the mitigation measure, impacts related to erosion and siltation would be less than significant.

While the project would require clearing activities, the project would keep the river channel in its natural form as much as possible and would only remove the minimum amount of vegetation required to allow for the passage of non-motorized watercrafts and small maintenance craft. As

detailed in the Geomorphic Assessment (Appendix C), hydraulic models (specific stream power and shear stress) found that the capability of the channel to convey sediment is likely to remain unchanged or increase slightly as a result of project implementation. [29] While recognizing the inherent uncertainty of sediment transport processes in vegetated channels, the predicted increase in shear stress from operation of the project would not be expected to shift the system to an unstable or eroding state. Nevertheless, while the flow of the channel would not cause an eroding state, construction and maintenance work would increase in-channel sedimentation and erosion. With implementation of BMPs and Mitigation Measure HYD-1a, the proposed in-channel improvements would result in a less than significant impact related to soil erosion or the loss or topsoil.

Boat Launch and Take-Out Facilities

Construction activities associated with the project would result in earth disturbing activities, including grading for access roads and facilities at the launch and take-out locations. All construction activities would be required to comply with Chapter 18 of the CBC, which regulates soil conditions, geotechnical investigations, grading both within flood zones and outside of flood zones, and the construction of foundations. Because the project area is larger than one acre in size, the proposed project would require compliance with NPDES Construction General Permit criteria, including the preparation of a SWPPP and inclusion of BMPs to control erosion and the off-site transport of soils. BMPs typically include, but are not limited to, silt fences, gravel bags, temporary ditches or swales, and/or soil stabilization measures such as erosion control mats. Implementation of erosion-control BMPs would minimize the potential for soil erosion or loss of topsoil. In addition, proposed access areas would be covered with an all-surface material which would reduce erosion potential, thereby minimizing potential for transfer of such sediment into the waterway. With implementation of BMPs and compliance with applicable regulations, the proposed boat launch and take-out facilities (including proposed access roads, restroom facilities, and parking areas) would result in less than significant impacts related to soil erosion or the loss of topsoil.

Geologic Instability

Threshold GEO-3: The project would result in a significant impact if the project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Impact Statement GEO-3: *While the project site is located in an area with lateral spreading risk, the project would comply with applicable regulatory requirements related to geologic instability. Therefore, impacts would be less than significant.*

As discussed above, the water trail and associated facilities would not be located in an area that has a risk of landslides or land subsidence/collapse. In addition, as discussed under Impact GEO-

[29] Owens River Water Trail Project Geomorphic Assessment, Environmental Science Associates, 2018b. Appendix C.

1.c the project would comply with applicable CBC standards to ensure that people or structures are not at risk related to liquefaction.

As indicated in the County's Multi-Jurisdictional Hazard Mitigation Plan, lateral spreading can occur on alluvial fans and other liquefaction-prone soils when liquefied soils become sufficiently fluid to spread across fairly shallow slopes.[30] As the project area has liquefaction prone soils, shallow slopes, and surface water (Owens River), the project area is at risk for lateral spreading. However, all roadways and structures, including the dirt access roads and launch and take-out facilities, would be required to comply with CBC regulations and adhere to standard engineering and construction practices. To reduce risk of lateral spreading, typical techniques are to target liquefaction prone soils. As detailed above under Impact GEO-1.c, standard practices to stabilize soils include, but are not limited to, reinforcement of fine grained soils, stabilization of subsurface voids by injecting aggregate grout, and compaction to densify soils. Conformance with applicable regulations would ensure that proposed structures would not be placed on unstable soils, and in turn would not cause the area to become unstable as a result of the proposed project. Therefore, impacts related to lateral spreading would be less than significant.

Expansive Soils

Threshold GEO-4: The project would result in a significant impact if the project would be located on expansive soil, as defined in Table 8-1-N of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property.

Impact Statement GEO-4: *Expansive soils are not prevalent in the county and are not an applicable hazard to the area, and therefore no impact would occur.*

As discussed above, expansive soils are types of soils that shrink or swell as the moisture content decreases or increases. According to the Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, expansive soils are not prevalent in the county and are not an applicable hazard to the area.[31] Therefore, no impact would occur related to expansive soils.

Paleontological Resources

Threshold GEO-6: The project would result in a significant impact if the project would directly or indirectly destroy a unique paleontological resource or unique geologic feature.

[30] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

[31] Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan, Inyo County, 2016. Available: http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

Impact Statement GEO-5: *The proposed project has the potential to directly or indirectly destroy a unique paleontological resource or unique geologic feature during construction of the boat launch and take-out facilities. However, implementation of* ***Mitigation Measures GEO-1 through GEO-4*** *would reduce potential impacts to less than significant.*

The paleontological resources assessment indicates three geologic units mapped within the proposed project area: active alluvium (mapped as Qa), eolian sands (mapped as Qs), and older lake deposits (mapped as Qlo). The older lake deposits are mapped at the surface along the margins of the Owens River floodplain and overlap the proposed boat launch and take-out facilities. These older lake deposits have a record of preserving fossil resources, including one fossil locality at the southern-most extend of the proposed project, and are considered to have high paleontological sensitivity. Both the active alluvium and eolian sands, which are mapped at the surface within the floodplain and adjacent terraces, respectively, are too young to contain fossil resources, and have low paleontological sensitivity at the surface, but overlie older lake deposits that have high paleontological sensitivity. Therefore, the paleontological sensitivity of areas mapped as either active alluvium or eolian sands should be considered low-to-high, increasing with depth. The exact depth at which this transition occurs is unknown in the proposed project area, but could be as little as 5 feet below ground surface, given the proximity of older lake deposits mapped at the surface.

As a result of these findings, construction of the proposed project has the potential to significantly impact paleontological resources and/or unique geologic features. Ground-disturbance in areas mapped as older lake deposits (Qlo) (see Figure 3.5-2) risk disturbing fossil resources at any depth. The project components that would result in ground disturbance in a manner that could potentially disturb fossil resources in older lake deposits include the boat launch and take-out facilities as well as the associated parking facilities and take-out access road. During construction of the water trail itself, the in-channel excavation activities, use of the spoils disposals areas, and use of existing floodplain access roads, would not disturb older lake deposits in a manner that would disturb fossil resources. In addition, ground-disturbance in excess of 5 feet in areas mapped as active alluvium (Qa) or eolian sands (Qs) may risk disturbing fossil resources. The only project component that could disturb deposits in excess of 5 feet is the vault toilet to be located at the boat launch and take-out. Implementation of **Mitigation Measures GEO-1 through GEO-4** would reduce potential significant impacts to paleontological resources and/or unique geologic features should they be encountered at the boat launch and take-out, including associated parking facilities and take-out access road, during proposed project construction. Implementation of these measures would reduce impacts to potential unique paleontological resources to less than significant.

3.5.5 Cumulative Impacts

The geographic scope of geologic, soil, seismic, and paleontological impacts include the project area and surrounding lands. The project area is located in a seismically active region and future development could expose additional people and structures to potentially adverse effects associated with earthquakes, including seismic ground shaking and seismic related ground failure. However, design-level geotechnical reports for proposed and reasonably foreseeable future projects would determine the design of future development so as to minimize exposure of people and structures to geology, soil, and seismic impacts. The project, as well as related projects, would be constructed to more current standards compared with older structures within the region, which would provide greater protection. In addition, the risks associated with exposure to potential geological and soil hazards are site specific and localized, and would not have an additive effect on the surrounding project area. The proposed project, as well as the related projects, would be constructed in accordance with the CBC seismic safety requirements and recommendations contained in the project-specific geotechnical reports. As for paleontological resources, many of the projects within the geographic scope of the cumulative impacts analysis have the potential to impact paleontological resources pursuant to CEQA. It is assumed that the paleontological resources within this geographic scope would be similar to those in the proposed project area. It is also expected that these projects would be or have been subject to analysis and review under CEQA, and that the potential affects to paleontological resources would be mitigated. As outlined in above, potential impacts to paleontological resources under the proposed project would be less than significant with the implementation of mitigation measures. Therefore, the project would not contribute to a potentially significant exposure to seismic ground shaking, seismic related ground failure, geological and soil hazards, or paleontological resources. Cumulative impacts would be less than significant.

3.5.6 Mitigation Measures

Refer to Section 3.7, *Hydrology and Water Quality* for details on the mitigation measure related to hydrology and water quality, including Mitigation Measures HYD-1a and HYD-2 referred to in this section. In addition, Mitigation Measures GEO-1 through GEO-4 would be required due to paleontological sensitivity in the project area.

> **Mitigation Measure GEO-1:** Prior to the start of construction activities, the County shall retain a Qualified Paleontologist that meets the standards of the Society of Vertebrate Paleontology (2010) to carry out all mitigation measures related to paleontological resources.
>
> **Mitigation Measure GEO-2:** Prior to start of any ground disturbing activities, the Qualified Paleontologist shall contribute to any construction worker cultural resources sensitivity training, outlined in Mitigation Measure CUL-2, either in person or via a training module provided to the Qualified Archaeologist. This training shall include information on what types of paleontological resources could be encountered during excavations, what to do in case an unanticipated discovery is made by a worker, and laws protecting paleontological resources. All construction personnel shall be informed of the possibility of encountering fossils and instructed to immediately inform the construction foreman or supervisor if any fossils are unexpectedly unearthed in an area where a

paleontological monitor is not present. The County shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure GEO-3: The Qualified Paleontologist shall supervise a paleontological monitor meeting the Society for Vertebrate Paleontology standards (2010). The monitor shall be present during all ground-disturbing activities occurring within areas mapped as older lake deposits (Qlo) at the boat launch and take-out facilities. The monitor shall also be present for all excavation activities exceeding 5 feet in depth for all project components in areas mapped as active alluvium (Qa) and eolian san (Qs), which have the potential to extend into older lake deposits (Qlo) at depth (see Figure 3.5-2). Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. Monitoring can be reduced to part-time inspections or ceased entirely if determined adequate by the Qualified Paleontologist in consultation with the County. Monitoring activities shall be documented in a Paleontological Resources Monitoring Report to be prepared by the Qualified Paleontologist at the completion of construction and shall be provided to the County and filed with the Natural History Museum of Los Angeles County within six (6) months of project completion.

Mitigation Measure GEO-4: If a unique geologic feature or paleontological resource is discovered during construction, the paleontological monitor shall be empowered to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation of the discovery. An appropriate buffer area shall be established by the Qualified Paleontologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. At the Qualified Paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing and evaluation of the find. All significant fossils shall be collected by the paleontological monitor and/or the Qualified Paleontologist. Collected fossils shall be prepared to the point of identification and catalogued before they are submitted to their final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Los Angeles County Natural History Museum, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school in the area for educational purposes. Accompanying notes, maps, and photographs shall also be filed at the repository and/or school.

3.5.7 Level of Significance After Mitigation

While the project site is located within a seismically active region, compliance with applicable regulatory standards would ensure that people or structures would not be exposed to substantial seismic ground-related failure, including liquefaction and lateral spreading. Construction of the project would require compliance with the NPDES Construction General Permit, including preparation of a SWPPP and implementation of BMPs, thereby reducing soil erosion impacts resulting from spoil placement and the construction of boat launch and take-out facilities. However, removing vegetation and sediment from the river would disturb bottom sediments, and could result in a substantial temporary increase in sediment and erosion within the river. With implementation of Mitigation Measure HYD-1a and HYD-2, impacts related to in-channel and

spoils areas sedimentation and erosion would be reduced to less than significant. Operation of the project is not expected to shift the channel system to an unstable or eroding state. Impacts related to ground failure and erosion would be less than significant. In addition, expansive soils are not prevalent in the county and are not an applicable hazard to the area. Therefore, no impact regarding expansive soils would occur. With implementation of Mitigation Measures GEO-1 through GEO-4, potential significant impacts to paleontological resources and/or unique geologic features would be reduced should resources be encountered during proposed project construction.

3.6 Greenhouse Gas Emissions

This section describes and evaluates issues related to greenhouse gas (GHG) emissions in the context of the proposed project. This section provides an overview of climate change; the various GHGs that have been identified as drivers of climate change; environmental and regulatory setting pertinent to GHG emissions, including those relevant at federal, state, and local levels; the criteria used for determining the significance of environmental impacts; and potential impacts associated with the construction and operation of the proposed project. Assumptions and calculations for GHG emissions are provided in Appendix E of this EIR.

3.6.1 Environmental Setting

Greenhouse Gases

Climate Change

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, data indicates that the current global conditions differ from past climate changes in rate and magnitude. The current increased changes in global climate have been attributed to anthropogenic (i.e., human-caused) activities by the Intergovernmental Panel on Climate Change (IPCC) (IPCC, 2013). GHGs trap long-wave radiation or heat in the atmosphere, which heats the surface of the Earth. Without human intervention, the Earth maintains an approximate balance between the GHG emissions in the atmosphere and the storage of GHGs in the oceans and terrestrial ecosystems. GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, manure, and consumption of fossil fuels for power generation, transportation, heating, and cooking, are the primary sources of GHG emissions.

The Federal government and State of California recognized that anthropogenic GHG emissions are contributing to changes in the global climate, and such changes are having and will have adverse effects on the environment, the economy, and public health. While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHGs emitted from a particular source or location. In other words, emissions of GHGs have the potential to cause global impacts rather than local impacts. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change and such conditions as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions. Existing climate change models also show that climate warming portends a variety of impacts on agriculture, including loss of microclimates that support specific crops, increased pressure from invasive weeds and diseases, and loss of productivity due to changes in water reliability and availability. In addition, rising temperatures and shifts in microclimates associated with global climate change are expected to increase the frequency and intensity of wildfires. California law defines GHGs to include the following

compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).[1]

The most common GHG that results from human activity is CO_2, which represents 76 percent of total anthropogenic GHG emissions in the atmosphere (as of 2010 data) (IPCC, 2013), followed by CH_4 and N_2O. Scientists have established a Global Warming Potential (GWP) to gauge the potency of each GHG's ability to absorb and re-emit long-wave radiation. The GWP of a gas is determined using CO_2 as the reference gas with a GWP of 1 over a given period of time, which is usually 100 years. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The sum of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents (CO_2e). The measurement unit of CO_2e is used to report the combined potency of GHG emissions. The IPCC updated the GWP values based on the latest science in its Fifth Assessment Report (AR5). Although GWPs have been updated in IPCC AR5, the California Air Resources Board (CARB) uses GWPs from IPCC AR4 for its most recent GHG emissions inventory.[2] Compounds that are regulated as GHGs are discussed below (IPCC, 1995; IPCC, 2007).

- **Carbon Dioxide (CO_2):** CO_2 is the most abundant anthropogenic GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO_2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- **Methane (CH_4):** CH_4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, anaerobic decomposition of organic matter in landfills, manure management, and leaks in natural gas pipelines. The GWP of CH_4 is 21 in the IPCC SAR and 25 in the IPCC AR4.
- **Nitrous Oxide (N_2O):** N_2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310 in the IPCC SAR and 298 in the IPCC AR4.
- **Hydrofluorocarbons (HFCs):** HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs range from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR and 124 for HFC-152a to 14,800 for HFC-23 in the IPCC AR4.
- **Perfluorocarbons (PFCs):** PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR and 7,390 to 17,700 in the IPCC AR4.
- **Sulfur Hexafluoride (SF_6):** SF_6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an

1 *State CEQA Guidelines* Section 15364.5; Health and Safety Code, Section 38505(g).
2 GWPs and associated CO_2e values were developed by the Intergovernmental Panel on Climate Change (IPCC), and published in its Second Assessment Report (SAR) in, 1996. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's SAR. The IPCC updated the GWP values based on the science in its Fourth Assessment Report (AR4). CARB reports GHG emission inventories for California using the GWP values from the IPCC AR4.

electrical insulator in high voltage equipment that transmits and distributes electricity. SF_6 has a GWP of 23,900 in the IPCC SAR and 22,800 in the IPCC AR4.

Effects of Global Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be eliminated. Nonetheless, the IPCC, in its Fifth Assessment Report, Summary for Policy Makers, stated that, "it is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together (IPCC, 2013)." A report from the National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity (Anderegg et.all, 2010).

According to the California Environmental Protection Agency (CalEPA), the potential impacts in California due to global climate change may include loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; an increase in the number of large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (CEPA, 2006). Data regarding potential future climate change impacts are available from the California Natural Resources Agency (CNRA), which in 2009 published the *California Climate Adaptation Strategy* (CNRA,2009) as a response to the Governor's Executive Order S-13-2008. In 2014, the CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan (CNRA, 2014)*. In 2016, the CNRA released *Safeguarding California: Implementation Action Plans* in accordance with Executive Order B-30-15, identifying a lead agency to lead adaptation efforts in each sector. *Safeguarding California* lists specific recommendations for State and local agencies to best adapt to the anticipated risks posed by a changing climate.

In accordance with the *California Climate Adaptation Strategy*, the California Energy Commission (CEC) was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers (CNRA, 2009). The website, known as Cal-Adapt, became operational in 2011.[3] The information provided by the Cal-Adapt website represents a projection of potential future climate scenarios. The data are comprised of the average values from a variety of scenarios and models, and are meant to illustrate how the climate may change based on a variety of different potential social and economic factors. Below is a summary of some of the potential climate change effects and relevant Cal-Adapt data, reported by

[3] The Cal-Adapt website address is: http://cal-adapt.org.

an array of studies that could be experienced in California as a result of global warming and climate change.

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State (CEC, 2006).

Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that "considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change (Pacific Institute, 2003)." For example, some studies identify little change in total annual precipitation in projections for California while others show significantly more precipitation (Pacific Institute, 2003). Warmer, wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff would occur at a time when some basins are either being recharged at their maximum capacity or are already full (Pacific Institute, 2003). Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (Pacific Institute, 2003).

The California Department of Water Resources report on climate change and effects on the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta, concludes that "climate change will likely have a significant effect on California's future water resources…[and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain." It also reports that the relationship between climate change and its potential effect on water demand is not well understood, but "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (CDWR, 2006). In its Fifth Assessment Report, the IPCC states "Changes in the global water cycle in response to the warming over the 21st century will not be uniform. The contrast in precipitation between wet and dry regions and between wet and dry seasons will increase, although there may be regional exceptions (IPCC, 2013)."

Hydrology and Sea Level Rise

As discussed above, climate changes could potentially affect the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply, and increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (CCCC, 2006).

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Scientists expect that the average global surface temperature could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation (NRC, 2010). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as 2 feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage (Parmesan, 2004a; Parmesan et al. 2004b).

Greenhouse Gas Emission Inventories

State of California

Worldwide, man-made emissions of GHGs were approximately 49,000 million metric tons (MMT) CO_2e in 2010 including ongoing emissions from industrial and agricultural sources and emissions from land use changes (e.g., deforestation) (IPCC, 2013). Emissions of CO_2 from fossil fuel use and industrial processes account for 65 percent of the total while CO_2 emissions from all sources accounts for 76 percent of the total GHG emissions. Methane emissions account for 16 percent and N_2O emissions for 6.2 percent. In 2015, the United States was the world's second-largest emitter of CO_2 at 5,150 MMT; China was the largest emitter of CO_2 at 10,700 MMT (PBL, 2016).

CARB compiles GHG inventories for the State of California. Based on the 2015 GHG inventory data (the latest year for which data are available from CARB), California emitted 440.4 million metric tons of CO_2e ($MMTCO_2e$) including emissions resulting from imported electrical power, and 405 $MMTCO_2e$ excluding emissions related to imported power. Since 2007, statewide GHG

emissions have followed a declining trend and 2015 emissions were 1.5 $MMTCO_2e$ lower than 2014 (CARB, 2017). Between 1990 and 2015, the population of California grew by approximately 9.1 million (from 29.8 to 38.9 million), which represents an increase of approximately 30 percent from 1990 population levels (USCB, 2017). In addition, the California economy, measured as gross State product, grew from $773 billion in 1990 to $2.49 trillion in 2015 representing an increase of approximately three times the 1990 gross State product (CDF, 2017). Despite the population and economic growth, California's net GHG emissions only grew by approximately 2 percent between 1990 and 2015. According to CARB, the declining trend coupled with the State's GHG reduction programs (such as the Renewables Portfolio Standard, LCFS, vehicle efficiency standards, and declining caps under the Cap and Trade Program) demonstrate that California is on track to meet the 2020 GHG reduction target codified in California Health and Safety Code (HSC), Division 25.5, also known as The Global Warming Solutions Act of 2006 (AB 32) (CARB, 2016). **Table 3.6-1**, *State of California Greenhouse Gas Emissions,* identifies and quantifies statewide anthropogenic GHG emissions and sinks (e.g., areas of carbon sequestration due to forest growth) in 1990 and 2015 (the most recent year for which data are available from CARB). As shown in the table, the transportation sector is the largest contributor to statewide GHG emissions at 37 percent in 2015.

TABLE 3.6-1
STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS [a]

Category	Total 1990 Emissions using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2016 Emissions using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2015 Emissions
Transportation	150.6	35%	174.0	41%
Electric Power	110.5	26%	69.0	16%
Commercial	14.4	3%	23.0	5%
Residential	29.7	7%	28.3	7%
Industrial	105.3	24%	100.3	23%
High GWP/Non-Specified [b]	1.3	<1%	0.8	<1%
Agriculture/Forestry	18.8	6%	33.8	8%
Net Total (IPCC AR4) [c]	**431**	**100%**	**429.4**	**100%**

[a] Totals may not add up exactly due to rounding.
[b] High GWP gases are not specifically called out in the 1990 emissions inventory.
[c] CARB revised the State's 1990 level GHG emissions using GWPs from the IPCC AR4.

Sources: CARB, 2018; CARB, 2017a

Inyo County

In 2012 an Energy Savings Analysis for County Greenhouse Gas Inventory was prepared for Inyo County that provided an estimate of GHG emissions from government activities in 2011 (O'Brien Salas, 2012). The Energy Savings Analysis was approved by the County Board of Supervisors on November 13th 2012 as part of the *County of Inyo Cost, Energy and Service Efficiencies Action Plan.* The inventory estimated the emissions of 3,618 MT of GHG in 2011 from government activities. Emissions from Inyo County government facilities are from gasoline, electricity, diesel, and propane. Gasoline emissions accounted for the greatest percentage of emissions (46 percent;

1,684 MT). Electricity was the second largest contributor (29 percent; 1,037 MT). Diesel and Propane represent 13 percent (479 MT) and 12 percent (418 MT), respectively (O'Brien Salas, 2012).

3.6.2 Regulatory Framework

Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing Federal policy to address GHGs. The Federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the Energy Star labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

On May 19, 2009, the President announced a national policy for fuel efficiency and emissions standards in the United States auto industry.[4] The adopted Federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle (USEPA, 2012).

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Federal Clean Air Act. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the Clean Air Act consistent with the United States Supreme Court's decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

[4] On March 15, 2017, the Trump Administration announced its intention to direct the USEPA to reconsider the model year 2017-2025 cars and light truck emissions standards, but did not rescind California's waiver. Therefore, the standards remain in effect. See: The White House, Remarks by President Trump at American Center for Mobility | Detroit, MI, March 15, 2017. Available at: https://www.whitehouse.gov/the-press-office/2017/03/15/remarks-president-trump-american-center-mobility-detroit-mi. Accessed May 2017.

Standards for GHG emissions and fuel efficiency for medium- and heavy-duty trucks have been jointly developed by the USEPA and the National Highway Traffic Safety Administration (NHTSA). The Phase 1 standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA, 2011a). The USEPA and NHTSA are in the process of considering adoption of the Phase 2 standards, which would cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA, 2016).

Fuel Efficiency Standards

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by the USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA, 2011b). The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA, 2012).

State

California has promulgated a series of executive orders, laws, and regulations aimed at reducing both the level of GHGs in the atmosphere and emissions of GHGs from commercial and private activities within the State.

California's Involvement in International Climate Change Efforts

California is a member of the Under2 Coalition, which is an international coalition representing 39 percent of the global economy, and has signed a memorandum of understanding to limit greenhouse gas emissions to below 80 to 95 percent below 1990 levels and limit global warming to 2 degrees Celsius. In 2018, a Global Climate Summit was held in San Francisco. At the Summit, California along with more than 100 other jurisdictions, pledged to reach carbon neutrality by mid-century positioning the State as an active partner in international climate change efforts. In response, Executive Order B-55-18 commits California to reaching net-zero emissions by 2045 and net negative emissions thereafter.

Between 2016 and 2017, the Paris Agreement was adopted by 196 countries within the United Nations Framework Convention on Climate Change, and sets a goal to limit temperature increases to below 2 degrees Celsius above pre-industrial levels. The Paris Agreement came into force for the United States on November 4, 2016, and agreed to reduce GHG emissions by 26 percent to 28 percent of 2005 levels by 2025 (UN, 2016). However, on August 4, 2017, under President Donald Trump, the United States officially announced their intention to withdraw from the treaty. However, under the agreement's rules, parties may only begin withdrawal after 3 years of participation, with one additional year required to fully withdraw. Regardless, California still plans to continue its GHG reduction policies.

California Air Resources Board

CARB, as part of the CalEPA, is responsible for the coordination and administration of both Federal and State air pollution control programs within California. In this capacity, CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. CARB also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP) for criteria pollutants designated as nonattainment of NAAQS in an air basin, in collaboration with the Federal government and local air districts. CARB also has primary responsibility for adopting regulations to meet the State's goal of reducing GHG emissions to 40 percent below 1990 levels by 2030.

Executive Order S-3-05 and Executive Order B-30-15

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels

In accordance with Executive Order S-3-05, the Secretary of CalEPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the Business, Transportation, and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of CARB, the Chairperson of the California Energy Commission, and the President of the Public Utilities Commission. Representatives from these agencies comprise the California Climate Action Team (CCAT).

The CCAT provides biennial reports to the Governor and Legislature on the state of GHG reductions in the State as well as strategies for mitigating and adapting to climate change. The first CCAT Report to the Governor and the Legislature in 2006 contained recommendations and strategies to help meet the targets in Executive Order S-3-05 (CalEPA, 2006). The 2010 CAT Report, finalized in December 2010, expanded on the policy-oriented 2006 assessment (CalEPA, 2010). The new information detailed in the CCAT Report included development of revised climate and sea-level projections using new information and tools that had become available in the previous 2 years; and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts.

On April 29, 2015, California Governor Brown issued Executive Order B-30-15. Therein, Governor Brown:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.

- Ordered all State agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017 (CARB, 2017b). The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target, which build on the Cap-and-Trade Regulation, the Low Carbon Fuel Standard (LCFS), improved vehicle, truck and freight movement emissions standards, increasing renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet our energy needs. The 2017 Scoping Plan also comprehensively addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered a number of different alternatives to achieve the 2030 GHG reduction goal. The "Scoping Plan Scenario" was ultimately adopted and relies on the continuation of ongoing and statutorily required programs and continuation of the Cap-and-Trade Program. The Scoping Plan Scenario was modified from the January 2017 Proposed Scoping Plan to reflect AB 398, including removal of the 20 percent GHG reduction measure for refineries (CARB, 2017b).

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals" (CARB, 2017b). Under the Scoping Plan Scenario, the majority of the reductions would result from continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives are designed to consider various combinations of these programs as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines regulated GHGs as CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6, and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries, with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions reduction target for 2020. The 2020 emissions reduction target was originally set at 427 $MMTCO_2e$ using the GWP values from the IPCC SAR. CARB has determined the updated target, based on GWP values from the IPCC AR4, for the 1990 GHG emissions inventory and 2020 GHG emissions target is now 431 $MMTCO_2e$. CARB also projected the State's 2020 GHG emissions under business-as-usual (BAU) conditions, also known as no action taken (NAT) conditions—that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the State's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 $MMTCO_2e$ (using GWP values from the IPCC SAR). CARB also updated the State's projected 2020 emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 $MMTCO_2e$ (CARB, 2014). In the 2017 Climate Change Scoping Plan Update, CARB provides the estimated projected statewide 2030 emissions and the level of reductions necessary to achieve the 2030 target of 40 percent below 1990 levels, taking into account 2020 GHG reduction policies and programs. A summary of the GHG emissions reductions required under HSC Division 25.5 is provided in **Table 3.6-2**, *Estimated Greenhouse Gas Emissions Reductions Required by HSC Division 25.5*.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amend HSC Division 25.5 and establish a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure that the benefits of State climate policies reach into disadvantaged communities.

Continuation of the Cap-and-Trade regulation (or carbon tax) is expected to cover approximately 34 to 76 percent of the 2030 reduction obligation (CARB, 2017b). Under the Proposed Scenario, the short-lived climate pollutant (SLCP) strategy is expected to cover approximately 13 to 26 percent. The Renewables Portfolio Standard with 50 percent renewable electricity by 2030 is expected to cover approximately 10 to 11 percent. The mobile source strategy and sustainable freight action plan includes maintaining the existing vehicle GHG emissions standards, increasing the number of zero emission vehicles and improving the freight system efficiency, and is expected to cover approximately 9 to 11 percent.

The doubling of the energy efficiency savings, including demand-response flexibility for 10 percent of residential and commercial electric space heating, water heating, air conditioning and refrigeration, requires the CEC in collaboration with the California Public Utilities Commission (CPUC) to establish the framework for the energy savings target setting. The CEC has proposed a schedule for establishing this framework and target setting by November 2017, which will outline the necessary actions that will need to occur in future years (CEC, 2016). The CEC states that workforce education and training institutions will be required to engage the building industry, map industry priorities for efficiency to major occupations that will provide services, identify workforce competency gaps, and quantify the work needed to build a workforce to implement high-quality efficiency projects at scale (CEC, 2016). Under the Proposed Scenario, CARB

expects that the doubling of the energy efficiency savings by 2030 would cover approximately 7 to 8 percent of the 2030 reduction obligation. The other strategies would be expected to cover the remaining percentage of the 2030 reduction obligation.

TABLE 3.6-2
ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS REQUIRED BY HSC DIVISION 25.5

Emissions Scenario	GHG Emissions (MMTCO2e)
2008 Scoping Plan (IPCC SAR)	
2020 BAU Forecast (CARB 2008 Scoping Plan Estimate)	596
2020 Emissions Target Set by AB 32 (i.e., 1990 level)	427
Reduction below Business-As-Usual necessary to achieve 1990 levels by 2020	**169 (28.4%) [a]**
2011 Scoping Plan (IPCC AR4)	
2020 BAU Forecast (CARB 2011 Scoping Plan Estimate)	509.4
2020 Emissions Target Set by AB 32 (i.e., 1990 level)	431
Reduction below Business-As-Usual necessary to achieve 1990 levels by 2020	**78.4 (15.4%) [b]**
2017 Scoping Plan	
2030 BAU Forecast ("Reference Scenario" which includes 2020 GHG reduction policies and programs)	389
2030 Emissions Target Set by HSC Division 25.5 (i.e., 40% below 1990 Level)	260
Reduction below Business-As-Usual Necessary to Achieve 40% below 1990 Level by 2030	**129 (33.2%) [c]**

$MMTCO_2e$ = million metric tons of carbon dioxide equivalents

[a] 596 – 427 = 169 / 596 = 28.4%
[b] 509.4 – 431 = 78.4 / 509.4 = 15.4%
[c] 389 – 260 = 129 / 389 = 33.2%

Source: CARB, 2011; CARB, 2014; CARB, 2017b

Senate Bill 97

SB 97, enacted in 2007, amended CEQA to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed the California Office of Planning and Research (OPR) to develop revisions to the *State CEQA Guidelines* "for the mitigation of GHG emissions or the effects of GHG emissions" and directed the Resources Agency to certify and adopt these revised *State CEQA Guidelines* by January 2010. The revisions were completed March 2010 and codified into the California Code of Regulations and became effective within 120 days pursuant to CEQA. The amendments provide regulatory guidance for the analysis and mitigation of the potential effects of GHG emissions. The *State CEQA Guidelines* require:

- Inclusion of GHG analyses in CEQA documents
- Determination of significance of GHG emissions
- If significant GHG emissions would occur, adoption of mitigation to address significant emissions

Renewables Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewables Portfolios Standard (RPS) to 33 percent renewable power by 2020. Pursuant to Executive Order S-21-09, CARB was also preparing regulations to supplement the RPS with a Renewable Energy Standard that will result in a total renewable energy requirement for utilities of 33 percent by 2020. But on April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's RPS to 33 percent by 2020. Notably, unlike the prior 20 percent RPS, the current 33 percent RPS applies to Publicly Owned Utilities, such as Burbank Water and Power (BWP), which is the utility provider for the city of Burbank and the project.

California Senate Bill 1368

California SB 1368, a companion bill to AB 32, requires the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) to establish GHG emission performance standards for the generation of electricity. These standards will also generally apply to power that is generated outside of California and imported into the State. SB 1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting CARB to meet its mandate under AB 32. On January 25, 2007, the CPUC adopted an interim GHG Emissions Performance Standard, which is a facility-based emissions standard requiring that all new long-term commitments for baseload generation to serve California consumers be with power plants that have GHG emissions no greater than a combined cycle gas turbine plant. That level is established at 1,100 pounds of CO_2 per megawatt-hour. Further, on May 23, 2007, the CEC adopted regulations that establish and implement an identical Emissions Performance Standard of 1,100 pounds of CO_2 per megawatt-hour (see CEC Order No. 07-523-7).

Title 24, Building Standards Code and CALGreen Code

The California Energy Commission first adopted the Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5)

Environmental air quality. (CBSC, 2010)" The CALGreen Code is not intended to substitute for or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission. When the CALGreen Code went into effect in 2009, compliance through 2010 was voluntary. As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the State. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design and overall environmental quality (CBSC, 2010). The CALGreen Code was most recently updated in 2016 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2017 (CBSC, 2016).

Cap-and-Trade Program

The Climate Change Scoping Plan identifies a Cap-and-Trade Program as a key strategy CARB will employ to help California meet its GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB has designed and adopted a California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020.[5] Under Cap-and-Trade program, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO_2e per year) and declines over time, and facilities subject to the cap can trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors commenced in 2013 and declines over time, achieving GHG emission reductions throughout the Program's duration.[6] On July 17, 2017 the California legislature passed Assembly Bill 398, extending the Cap-and-Trade program through 2030.

The Cap-and-Trade Regulation provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis.

If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. In other words, the Cap-and-Trade Program functions similarly to an insurance policy for meeting California 2020's GHG emissions reduction mandate.

5 17 CCR Sections 95800 to 96023.

6 See generally 17 CCR Sections 95811, 95812.

California Assembly Bill No. 1493 (AB 1493, Pavley), (Chapter 200, Statutes of 2002)

In response to the transportation sector accounting for the largest portion of California's GHG emissions at approximately 41 percent in 2015 (see Table 3.6-1, above), AB 1493 (Chapter 200, Statutes of 2002), enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is non-commercial personal transportation manufactured in and after 2009. In setting these standards, CARB must consider cost effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers (CARB, 2005).

As discussed previously, the USEPA and USDOT have adopted Federal standards for model year 2012 through 2016 light-duty vehicles. In light of the USEPA and USDOT standards, California - and states adopting California emissions standards - have agreed to defer to the proposed national standard through model year 2016. The 2016 endpoint of the Federal and State standards is similar, although the Federal standard ramps up slightly more slowly than required under the State standard. The State standards (called the Pavley standards) require additional reductions in CO_2 emissions beyond model year 2016 (referred to as Pavley Phase II standards).[7] As noted above, the USEPA and USDOT have adopted GHG emission standards for model year 2017 through 2025 vehicles (USEPA, 2012). These standards are slightly different from the Pavley Phase II standards, but the State of California has agreed not to contest these standards, in part due to the fact that while the national standard would achieve slightly lower reductions in California, it would achieve greater reductions nationally and is stringent enough to meet State GHG emission reduction goals (CARB, 2017c). On November 15, 2012, CARB approved an amendment that allows manufacturers to comply with the 2017-2025 national standards to meet State law.

Executive Order S-01-07

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. The order mandates the following: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California. In September 2015, CARB approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In the proposed 2017 Climate Change Scoping Plan Update, CARB's preferred recommendation includes increasing the stringency of the LCFS by reducing the carbon intensity of transportation fuels by 18 percent by 2030, up from the current target of 10 percent by 2020 (CARB, 2017b). In April 2017, the LCFS was brought before the Court of Appeal challenging the analysis of potential nitrogen dioxide impacts from biodiesel fuels. The Court directed CARB to conduct an analysis of nitrogen dioxide impacts from biodiesel fuels and froze the carbon intensity targets for diesel and

[7] On March 24, 2017, CARB voted unanimously to uphold the State's model year 2017-2025 cars and light truck emissions standards. See: California Air Resources Board, CARB finds vehicle standards are achievable and cost-effective, March 24, 2017. Available at: https://www.arb.ca.gov/newsrel/newsrelease.php?id=908. Accessed May 2017.

biodiesel fuel provisions at 2017 levels until CARB has completed this analysis, which CARB has indicated is expected to occur in 2018 (Biodiesel, 2017).

Senate Bill 375 (SB 375, Steinberg) (Chapter 728, Statutes of 2008)

SB 375 (Chapter 728, Statutes of 2008), which establishes mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions, was adopted by the State on September 30, 2008. Under SB 375, CARB is required, in consultation with the Metropolitan Planning Organization in the State, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. Of note, the proposed reduction targets explicitly exclude emission reductions expected from the AB 1493 and the low carbon fuel standard regulations.

The Inyo County Local Transportation Commission (LTC) is the designated Regional Transportation Agency for Inyo County. On September 16, 2015, the Inyo County LTC adopted the 2015 Regional Transportation Plan. Using growth forecasts and economic trends, the RTP provides a coordinated, 20-year vision of the regionally significant transportation improvements and policies needed to efficiently move goods and people within the region.

According to CARB, the initial GHG reduction targets established under SB 375 apply to approximately 95 percent of the State's population, vehicle miles traveled (VMT), and passenger vehicle GHG emissions (CARB, 2010). Some of the smaller MPOs had relatively small or zero GHG reduction requirements in the initial target setting. CARB has indicated it would reevaluate the targets for future updates. As such, the Inyo County LTC, along with the other 20 county LTCs that are not within an MPO, comprise less than five percent of the State's GHG emissions from the portion of the transportation sector that is the subject of SB 375. As a result, Inyo County is exempt from the GHG reduction requirements of SB 375.

The RTP acknowledges that overall traffic volumes on Inyo state highways have generally decreased over the last decade (LSC, 2015). Regardless, the Regional Transportation Plan (RTP) identifies improvements to bicycle and pedestrian facilities which encourage residents and visitors to use alternative transportation methods and thereby, reduce GHG emissions. As part of the RTP, Inyo County includes strategies to reduce GHG emissions. These strategies include: Implement Active Transportation Project Improvements; Implement Transit System Improvements; and Expand Vanpool/Rideshare Programs.

CARB Anti-Idling Measure

In 2004, CARB adopted a control measure to limit commercial heavy duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter (DPM) and other air contaminants.[8] The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. In general, it prohibits idling for more than 5 minutes at any location.

[8] Calif. Code of Regulations, Title 13, Sec. 2485. See CARB, ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, http://www.arb.ca.gov/regact/idling/idling.htm. Accessed May 2017.

While this measure is aimed primarily at reducing air pollution, it has a co-benefit of limiting GHG emissions from unnecessary idling.

Local

Inyo County General Plan

The Circulation and Conservation/Open Space Elements of the Inyo County General Plan sets forth goals for public transportation, bicycle, land-based trail use, biological diversity, cultural heritage, visual resources, and recreation (Inyo County, 2001). On March 24, 2015, Inyo County Board of Supervisors adopted a Renewable Energy General Plan Amendment which describes the implementation of solar energy within the County. The following goals and policies are applicable to the proposed project's recreational nature, and have the potential to reduce GHG emissions by providing more localized recreation activities.

> **Goal: REC-1** Develop a public parks, recreation, and open space system that provides adequate space and facilities to meet the varied needs of County residents and visitors.
>
> > **Policy REC-1.1**: **Natural Environment as Recreation.** Encourage the use of the natural environment for passive recreational opportunities.
> >
> > **Policy REC-1.2**: **Recreational Opportunities on Federal, State, and LADWP Lands.** Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands.

Inyo County Energy Savings Analysis for County Greenhouse Gas Inventory

The Energy Savings analysis for County Greenhouse Gas Inventory focuses on energy efficiencies and savings available for County facilities and activities. The analysis includes gasoline, diesel, electricity, and propane consumed within government facilities and determines the County's carbon footprint based on these energy sources.

Inyo County Cost, Energy and Service Efficiencies Action Plan

The Inyo County Board of Supervisors adopted a Cost, Energy and Service Efficiencies Action Plan in November 2012. The plan was developed to guide energy efficiencies and reductions at County facilities. The plan includes management structure to oversee energy programs, goals, to reduce energy consumption and GHG emissions, and specific programs to achieve these goals (Inyo County, 2012).

3.6.3 Thresholds and Methodology

Thresholds of Significance

In assessing the proposed project's potential impacts related to greenhouse gases in this section, the analysis uses Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant greenhouse gas impact would occur if the proposed project would:

> **GHG-1** Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Amendments to Section 15064.4 of the *State CEQA Guidelines* were adopted on December 28, 2018 to assist lead agencies in determining the significance of the impacts of GHG emissions. Consistent with existing CEQA practice, Section 15064.4 gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. If a qualitative analysis is used, in addition to quantification, this section recommends certain qualitative factors that may be used in the determination of significance (i.e., extent to which the project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and extent to which the project complies with regulations or requirements adopted to implement reduction or mitigation of GHGs). The amendments do not establish a threshold of significance; rather, lead agencies are granted discretion to establish significance thresholds for their respective jurisdictions, including looking to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), so long as any threshold chosen is supported by substantial evidence (see Section 15064.7[c]).

The California Natural Resources Agency has also clarified that the *State CEQA Guidelines* amendments focus on the effects of GHG emissions as cumulative impacts, and that they should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see Section 15064[h][3]) (CNRA, 2009b).

Although GHG emissions can be quantified as discussed under Methodology below, CARB, Great Basin Unified Air Pollution Control District, and Inyo County have not adopted project-level significance thresholds for GHG emissions that would be applicable to the proposed project. The Governor's Office of Planning and Research (OPR) released a technical advisory on CEQA and climate change that provided some guidance on assessing the significance of GHG emissions, and states that "lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice," and that while "climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment (OPR, 2008)." Furthermore, the technical advisory states that "CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project (OPR, 2008)."

Per *State CEQA Guidelines* Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project.[9] To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret,

9 14 CCR Section 15064(h)(3).

or make specific the law enforced or administered by the public agency.[10] Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."[11] Thus, *CEQA Guidelines* Section 15064(h)(3) allows a lead agency to make a finding of non-significance for GHG emissions if a project complies with a program or other regulatory schemes to reduce GHG emissions.[12]

In the absence of any adopted, quantitative threshold, for the purpose of this Draft EIR, the proposed project would not have a significant effect on the environment if the project is found to be consistent with the applicable regulatory plans and policies to reduce GHG emissions, including the emissions reduction measures discussed within CARB's Climate Change Scoping Plan, Executive Orders S-3-05 and B-30-15, the County's General Plan, and the Inyo County Energy Savings Analysis for County Greenhouse Gas Inventory.

The Great Basin Air Pollution Control District (GBAPCD) does not have specified methodologies for quantifying GHG emissions or thresholds for significance. However, GBAPCD allows lead agencies to use the thresholds and methodologies for air districts that the lead agency deems appropriate for the proposed project. Therefore, for analyzing greenhouse gas emissions, the South Coast Air Quality Management District (SCAQMD) methodologies have been included for use with the analysis and consistency with GHG reduction plans for determining significance.

Methodology

This section describes the methodologies and assumptions used for identifying and analyzing the emissions of GHGs resulting from the construction and operation of the proposed project. Modeling output and worksheets are provided in Appendix E of this EIR.

The General Reporting Protocol developed by the California Climate Action Registry (CCAR) provides procedures and guidelines for calculating and reporting GHG emissions from general and industry-specific activities. The General Reporting Protocol provides a range of basic calculation methods. However, they are typically designed for existing buildings or facilities and are not directly applicable to planning and development situations where the buildings or

10 14 CCR Section 15064(h)(3).

11 14 CCR Section 15064(h)(3).

12 See, for example, San Joaquin Valley Air Pollution Control District (SJVAPCD), CEQA Determinations of Significance for projects Subject to ARB's GHG Cap-and-Trade Regulation, APR-2025 (June 25, 2014), in which the SJVAPCD "determined that GHG emissions increases that are covered under ABR's Cap-and-Trade regulation cannot constitute significant increases under CEQA…" Furthermore, the SCAQMD has taken this position in CEQA documents it has produced as a lead agency. The SCAQMD has prepared three Negative Declarations and one Draft Environmental Impact Report that demonstrate the SCAQMD has applied its 10,000 $MTCO_2e$/yr significance threshold in such a way that GHG emissions covered by the Cap-and-Trade Program do not constitute emissions that must be measured against the threshold. See SCAQMD, Final Negative Declaration for Ultramar Inc. Wilmington Refinery Cogeneration project, SHC No. 2012041014 (October 2014); SCAQMD Final Negative Declaration for Phillips 99 Los Angeles Refinery Carson Plant—Crude Oil Storage Capacity project, SCH No. 2013091029 (December 2014); SCAQMD Final Mitigated Negative Declaration for Toxic Air Contaminant Reduction for Compliance with SCAQMD Rules 1420.1 and 1402 at the Exide Technologies Facility in Vernon, CA, SCH No. 2014101040 (December 2014); and SCAQMD Final Environmental Impact Report for the Breitburn Santa Fe Springs Blocks 400/700 Upgrade project, SCH No. 2014121014 (August 2015).

facilities do not yet exist. As a result, this section relies on calculation guidance from State and regional agencies with scientific expertise in quantifying GHG emissions, such as CARB and the SCAQMD.

The proposed project would not result in new permanent structures or area lighting and therefore, emissions for this project would result from transportation fuels used in the construction and operation/maintenance of the project.

Construction

Implementation of the proposed project includes the development of all-weather surface access roads, permanent launch and take-out facilities for non-motorized water craft, the removal of vegetation that is currently occluding the channel, and excavation of the river. Emissions will result from the operation of off-road construction equipment and construction worker trips. CalEEMod was used to determine the greenhouse gas emissions associated with the development of the water trail and the construction of the associated facilities.

Construction emissions were forecasted in the way that is consistent with calculations in Section 3.2, Air Quality, of this Draft EIR. The input values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. These values were then applied to the same construction phasing assumptions used in the criteria pollutant analysis in Section 3.2 to generate GHG emissions values for each construction year. The SCAQMD guidance, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, recognizes that construction-related GHG emissions from projects "occur over a relatively short-term period of time" and that "they contribute a relatively small portion of the overall lifetime project GHG emissions (SCAQMD, 2008)." The guidance recommends that construction project GHG emissions should be "amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD, 2008)." In accordance with that SCAQMD guidance, GHG emissions from construction have been amortized over the 30-year lifetime of the proposed project.

Operation

Operational GHG emission sources of the proposed project include mobile (vehicular traffic) sources, equipment activities associated with annual maintenance of the channel and embodied energy associated with solid waste generation (such as items associated with food, equipment packaging and personal hygiene items). With regard to energy demand, the proposed project would not result in permanent structures or area lighting that would require the consumption of electricity or natural gas. Therefore, these emissions sources are not addressed.

CalEEMod was used to estimate the operational GHG emissions. Mobile source emissions, were generated from vehicle miles traveled (VMT) based on the assumption that each of the approximately 4,400 boat launches would result in an individual trip to the project site, or there are 4,400 individual trips to the project site per year. This is a conservative analysis as it is likely that some of the launches will be family groups or organized group trips. Many visitor trips to the water trail created by the proposed project likely already occur within the Air Basin and therefore,

generate mobile-source emissions accessing other launch and take-out areas. Therefore, regional mobile source emissions could remain unchanged or even be reduced if the users were to be located closer to the proposed project as compared to the existing facilities they currently access. It is unknown at this time to what extent the proposed project would result in net new emissions or would relocate or redistribute existing sources of emissions, therefore the analysis assumes all trips are new trips.

Emission calculation of GHGs associated with solid waste disposal are based on default waste generation rates from the city park land use designation in CalEEMod. The GHG emission factors, particularly for CH_4 of solid waste, depend on characteristics of a specific landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, were used in this assessment as a conservative estimate of emissions.

Operational GHG impacts were assessed based on the project-related incremental increase in GHG emissions compared to baseline conditions. The project area is undeveloped and therefore all emissions associated with the operation of the proposed project are new emissions. As discussed previously, there is no numerical significance threshold applicable to this proposed project. Absent a numeric threshold, the estimated project GHG emissions quantities in this study are presented for informational purposes. Significance is based on consistency with GHG reduction plans and policies, as informed by the quantified project emissions.

Consistency with Greenhouse Gas Reduction Plan, Policies, and Actions

The proposed project's GHG emissions were evaluated by assessing the project's consistency with applicable GHG reduction strategies and actions adopted by the State and County. The California Governor's Office and Planning and Research encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. The CCAT Report provides recommendations for specific strategies for reducing GHG emissions and reaching the targets established in AB 32 and Executive Order S-3-05. As previously stated, the County has a Renewable Energy Ordinance, Energy Savings Analysis for County Greenhouse Gas Inventory, and a Cost, Energy and Service Efficiencies Action Plan. Thus, if the project is designed in accordance with these policies and regulations, it would result in a less than significant impact, because it would be consistent with the overarching State regulations on GHG reduction (AB 32 and SB 32).

3.6.4 Project Impacts

GHG Emissions

Threshold GHG-1: The project would result in a significant impact if the project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact Statement GHG-1: *Construction and operation of the project would result in the generation of GHG emissions. However, the project would not directly or indirectly generate emissions that would have a significant impact on the environment. Therefore, impacts would be less than significant.*

GHG emissions were calculated for construction activities. Construction would include development of boat launch and take-out areas; hand clearing of portions of the channel; mechanical clearing of portions of the channel; and spoils placement. Detailed emissions calculations are provided in Appendix E. Results of the proposed project's construction phase GHG emissions calculations are presented in **Table 3.6-3**, *Project Construction Greenhouse Gas Emissions*. The SCAQMD recommends that a project's construction-related GHG emissions be amortized over the project's 30-year lifetime in order to include these emissions as part of the project's annualized lifetime total emissions, so that GHG reduction measures address construction GHG emissions as part of operational GHG reduction strategies. In accordance with this recommendation, the project's estimated construction GHG emissions have been amortized over a 30-year period.

TABLE 3.6-3
PROJECT CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emission Source	CO2e (Metric Tons) [a]
Improvements	129
Hand Clearing	103
Mechanical Clearing	216
Spoils Placement	176
Total Maximum Construction Emissions	624
Amortized Maximum Construction Emissions (30-years)	21

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix E.

Source: ESA, 2019

Operational Emissions

GHG emissions associated with operation of the proposed project were estimated using the CalEEMod model. There are no permanent structures or area lighting associated with the proposed project, therefore, no energy associated with building operations are anticipated. Operational emissions are limited to the vehicle trips associated with the estimated 4,400 annual launches, solid waste collection, and annual maintenance of the channel.

Maximum annual net GHG emissions resulting from motor vehicles, maintenance activities, and waste sources were calculated for the expected first operating year, 2021 and year 2023. In year 2021, maintenance or clearing activities would be done by hand for 20 days per year while in year 2023, maintenance would occur using mechanical clearing activities for about five days per year. While not anticipated to be necessary, the analysis conservatively assumes that the maintenance activities could use the same spoil areas as the construction activities. While the 4,400 annual trips would occur at peak usage and would not likely occur from the first year, the analysis conservatively assumes 4,400 trips per year from year one.

The maximum GHG emissions from operation of the proposed project are shown in **Table 3.6-4**, *Unmitigated Annual Greenhouse Gas Emissions*. Table 3.6-4 shows the mobile source and waste removal emissions for the proposed project and the maximum emissions from each maintenance activity. The table also provides the maximum emissions for year 1 and 2 and maximum emissions for years 3 through 20. Annual emissions include the amortized construction emissions as provided in Table 3.6-3.

TABLE 3.6-4
UNMITIGATED OPERATIONAL ANNUAL GREENHOUSE GAS EMISSIONS

Emissions Sources	CO_2e (Metric Tons per Year) [a,b]
Passenger Vehicles	400
Waste	<1
Hand Clearing	7
Mechanical Clearing	3
Spoil Placement	2
Amortized Construction	21
Maximum Annual Project Emissions[c]	**430**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix E.

[b] CO_2e emissions are calculated using the global warming potential values from the Intergovernmental Panel on Climate Change Fourth Assessment Report.

[c] Maximum annual projected emissions is the greater of the clearing methods combined with site operations. Therefore, maximum annual emissions is the sum of passenger vehicles, waste, and soil placement emissions combined with the maximum of either the hand clearing or mechanical clearing emissions.

Source: ESA, 2019

As shown in Table 3.6-4, the majority of the emissions would occur from vehicles traveling over regional roadways. Using CARB's EMFAC2014 tool, for buildout year 2021 and 2023, mobile source emissions for the Great Valley Air Basin would respectfully result in 1,039,939 and 989,530 $MTCO_2$ annually. The proposed project's GHG emissions from mobile sources would represent approximately 0.01 percent of the Air Basin's annual mobile source GHG emissions. As stated in the methodology section, GHG emissions are conservative as all trips are considered new trips.

Project emissions would decline from what is presented in future years since passenger vehicles, the primary emission sources of the proposed project, will be replaced with newer, more efficient, vehicles. Newer fleets result in a greater percentage of the vehicle fleet meeting more stringent combustion emissions standards, such as the model year 2017–2025 Pavley Phase II standards.

As stated above, this analysis is not presented as the sole method to analyze GHG impacts. Instead, it is for informational purposes, to quantify the project's potential GHG emissions and correlate to the Climate Change Scoping Plan and supplement the primary threshold of significance below that demonstrates consistency with plans and policies adopted for the purpose of reducing GHG emissions.

Plans, Policies, and Regulations

Threshold GHG-2: The project would result in a significant impact if the project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Impact Statement GHG-2: *Construction and operation of the ORWT would result in the generation of GHG emissions. However, the project would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. Therefore, impacts would be less than significant.*

A significant impact would occur if the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment by conflicting with applicable regulatory plans and policies to reduce GHG emissions as discussed within CARB's Climate Change Scoping Plan, and the County's Renewable Energy Ordinance, or the County's Energy Saving Analysis for County Greenhouse Gas Inventory.

CARB's Climate Change Scoping Plan

In support of HSC Division 25.5, the State has promulgated specific laws aimed at GHG reductions applicable to the proposed project. The primary focus of many of the statewide and regional mandates, plans, policies and regulations is to address worldwide climate change. Due to the complex physical, chemical, and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the proposed project's increase in annual GHG emissions would cause a measurable change in global GHG emissions necessary to influence global climate change. Newer construction materials and practices, energy efficiency requirements, and newer appliances tend to emit lower levels of air pollutant emissions, including GHGs, as compared to those built years ago; however, the net effect is difficult to quantify. The GHG emissions of the proposed project alone would not likely cause a direct physical change in the environment. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008)."[13] It is global GHG emissions in their aggregate that contribute to climate change, not any single source of GHG emissions alone.

[13] California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhous Gas Emissions from projects Subject to the California Environmental Quality Act, (2008).

Table 3.6-5 *Consistency with Applicable Greenhouse Gas Reduction Strategies*, contains a list of GHG-reducing strategies potentially applicable to the proposed project. The analysis describes the consistency of the proposed project with these strategies that support the State's strategies in the Climate Change Scoping Plan to reduce GHG emissions. The Climate Change Scoping Plan relies on a broad array of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, incentives, voluntary actions, and market-based mechanisms such as the Cap-and-Trade program. As shown in Table 3.6-5, the proposed project would not conflict with applicable Climate Change Scoping Plan strategies and regulations to reduce GHG emissions.

Furthermore, not only is the proposed project consistent with currently applicable GHG emission reduction strategies as described in Table 3.6-5, but the proposed project also would not conflict with or impede the future statewide GHG emission reductions goals. CARB has outlined a number of potential strategies for achieving the 2030 reduction target of 40 percent below 1990 levels. These potential strategies include renewable resources for half of the State's electricity by 2030, increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in VMT, supporting other alternative transportation options, and use of high efficiency appliances, water heaters, and HVAC systems (Energy and Environmental Economics, 2015). The proposed project would benefit from statewide efforts toward increasing the fuel economy standards of vehicles. While CARB is in the process of developing a framework for the 2030 reduction target in the Scoping Plan, the proposed project would support or not impede implementation of these potential reduction strategies identified by CARB.

TABLE 3.6-5
CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION STRATEGIES

Sector / Source	Category / Description	Consistency Analysis
Mobile Sources		
AB 1493 (Pavley Regulations)	Reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017-2025 (Phase II). Also reduces gasoline consumption to a rate of 31 % of 1990 gasoline consumption (and associated GHG emissions) by 2020.	**Consistent.** The project would be consistent with this regulation and would not conflict with implementation of the vehicle emissions standards.
Low Carbon Fuel Standard (Executive Order S-01-07)	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	**Consistent.** The project would be consistent with this regulation and would not conflict with implementation of the transportation fuel standards.
Advanced Clean Cars Program	In 2012, CARB adopted the Advanced Clean Cars (ACC) program to reduce criteria pollutants and GHG emissions for model year vehicles 2015 through 2025. ACC includes the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.	**Consistent.** The project would be consistent with this regulation and would not conflict with implementation of the transportation fuel standards.

Sector / Source	Category / Description	Consistency Analysis
SB 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the State's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	**Consistent.** The project would develop a water trail and would provide recreational opportunity. The project would not result in growth within the region, instead it provides an alternative non-motorized water craft usage location which could reduce the VMT traveled to reach other existing locations.
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill (AB) 341	The IWMA mandated that State agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50 % of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a statewide goal for 75 % disposal reduction by the year 2020.	**Consistent.** The project's recreational nature would not likely generate more than 4 cubic yards[1] of solid waste annually and would not be required to comply with AB 341 as AB 341 only applies to facilities that generate more than 4 or more cubic yards per week. Therefore, the project would not conflict with implementation of AB 341.
Other Sources		
Climate Action Team	Reduce diesel-fueled commercial motor vehicle idling.	**Consistent.** The project would be consistent with the CARB Air Toxics Control Measure to limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time.
	Achieve California's 50% waste diversion mandate (Integrated Waste Management Act of 1989) to reduce GHG emissions associated with virgin material extraction.	**Consistent.** The project would meet this requirement as part of its compliance with the CALGreen Code through complying with local waste collection guidelines and responsibilities.

1. Solid waste generation was determined based on CalEEMod to equal 0.52 tons per year. Using 300 lbs per cubic yard (un-compacted mixed solid waste), the project would result in approximately 3.5 cubic yards annually.

Source: ESA, 2019.

Consistency with Executive Orders S-3-05 and B-30-15

Executive Orders S-3-05 and B-30-15 establish goals for reducing GHG emissions. Executive Order S-3-05's goal to reduce GHG emissions to 1990 levels by 2020 was codified by the Legislature as AB 32. As analyzed above, the proposed project would be consistent with AB 32. Therefore, the proposed project does not conflict with the 2020 component of Executive Orders S-3-05 and B-30-15.

Executive Orders S-3-05 and B-30-15 also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050. SB 32 established the 2030 goal as law but the 2050 goal has not yet been codified by the Legislature. However, studies have shown that, to meet the 2030 and 2050 targets, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. In its Climate Change Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 goal are too far in the future to define in detail (CARB, 2008)." In the First Update, however, CARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately (CARB, 2014)." Due to the technological shifts required and the unknown parameters of the regulatory framework

in 2030 and 2050, quantitatively analyzing the proposed project's impacts further relative to the 2030 and 2050 goals currently is speculative for purposes of CEQA.

Although the proposed project's emissions levels in 2030 and 2050 cannot yet be reliably quantified, statewide efforts are underway to facilitate the State's achievement of those goals and it is reasonable to expect the proposed project's emissions level to decline as the regulatory initiatives identified by CARB in the First Update are implemented, and other technological innovations occur. Stated differently, the proposed project's emissions total at buildout year of 2021 represents the maximum emissions inventory for the proposed project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. Given the reasonably anticipated decline in proposed project emissions once fully constructed and operational, the project would be consistent with the Executive Orders' goals.

Inyo County Energy Savings Analysis for County Greenhouse Gas Inventory

The Energy Savings Analysis for County Greenhouse Gas Inventory focuses on energy efficiencies and savings available for County facilities and activities. The analysis includes gasoline, diesel, electricity, and propane consumed within government facilities and determines the County's carbon footprint based on these energy sources. The Analysis focuses on the reduction of electricity and increased energy efficiencies of County buildings to meet the reduction goals. Since the proposed project does not result in the development of a permanent structure, the project would not hinder the County's ability to meet their goals. Therefore, emissions from the proposed project would not conflict with the County's ability to implement reductions determined in the Energy Saving's analysis.

Consistency with Other Plans, Policies, Regulations, or Recommendations to Reduce GHG Emissions

The proposed project would also be consistent with other statewide, regional and local plan, policies, regulations, and recommendations to reduce GHG emissions from development. The primary focus of many of the statewide and regional mandates, plans, policies and regulations is to address worldwide climate change. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008)." Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the proposed project's annual GHG emissions would cause a measurable change in global GHG emissions sufficient to create a significant project level impact on global climate change. Newer construction materials and practices, energy efficiency requirements, and newer appliances tend to emit lower levels of air pollutant emissions, including GHGs, as compared to those built years ago; however, the net effect is difficult to quantify. The GHG emissions of the proposed project alone is not expected to cause a direct physical change in the environment. It is global GHG emissions in their aggregate that contribute to climate change, not any single source of GHG emissions alone. Because of the lack of evidence indicating that the proposed project's GHG emissions would cause a measurable change in global GHG emissions sufficient to create a significant project-level impact on global climate change, project emissions are not anticipated to contribute considerably to global climate change. The proposed project is also considered to be

consistent with the GHG reduction goals of HSC Division 25.5 and associated GHG reduction plans, and it is not expected that project development would impede their goals.

As detailed above the proposed project would either be consistent, or would not conflict with, statewide and regional climate change mandates, plans, policies, and recommendations. Therefore, impacts would be less than significant.

3.6.5 Cumulative Impacts

CEQA requires that lead agencies consider the cumulative impacts of GHG emissions from even relatively small (on a global basis) increases in GHG emissions. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and therefore significant. In the case of global climate change, the proximity of the project to other GHG emissions generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. As stated above, GHG emission impacts are by their very nature cumulative, as both the California Natural Resources Agency and CAPCOA have recognized (CAPCOA,2008). Therefore, an analysis of a project's GHG emission impacts also serves as a cumulative impact assessment.

3.6.6 Mitigation Measures

The proposed project would result in less than significant impacts relative to greenhouse gas emissions. Therefore, no mitigation measures are necessary.

3.6.7 Level of Significance After Mitigation

The proposed project would result in less than significant impacts relative to greenhouse gas emissions.

3.7 Hydrology and Water Quality

This section describes the existing baseline conditions for surface water and groundwater resources and regional water quality. This section evaluates the proposed project's potential impacts on surface water, groundwater and water quality in the project area.

3.7.1 Environmental Setting

Regional and Local Setting

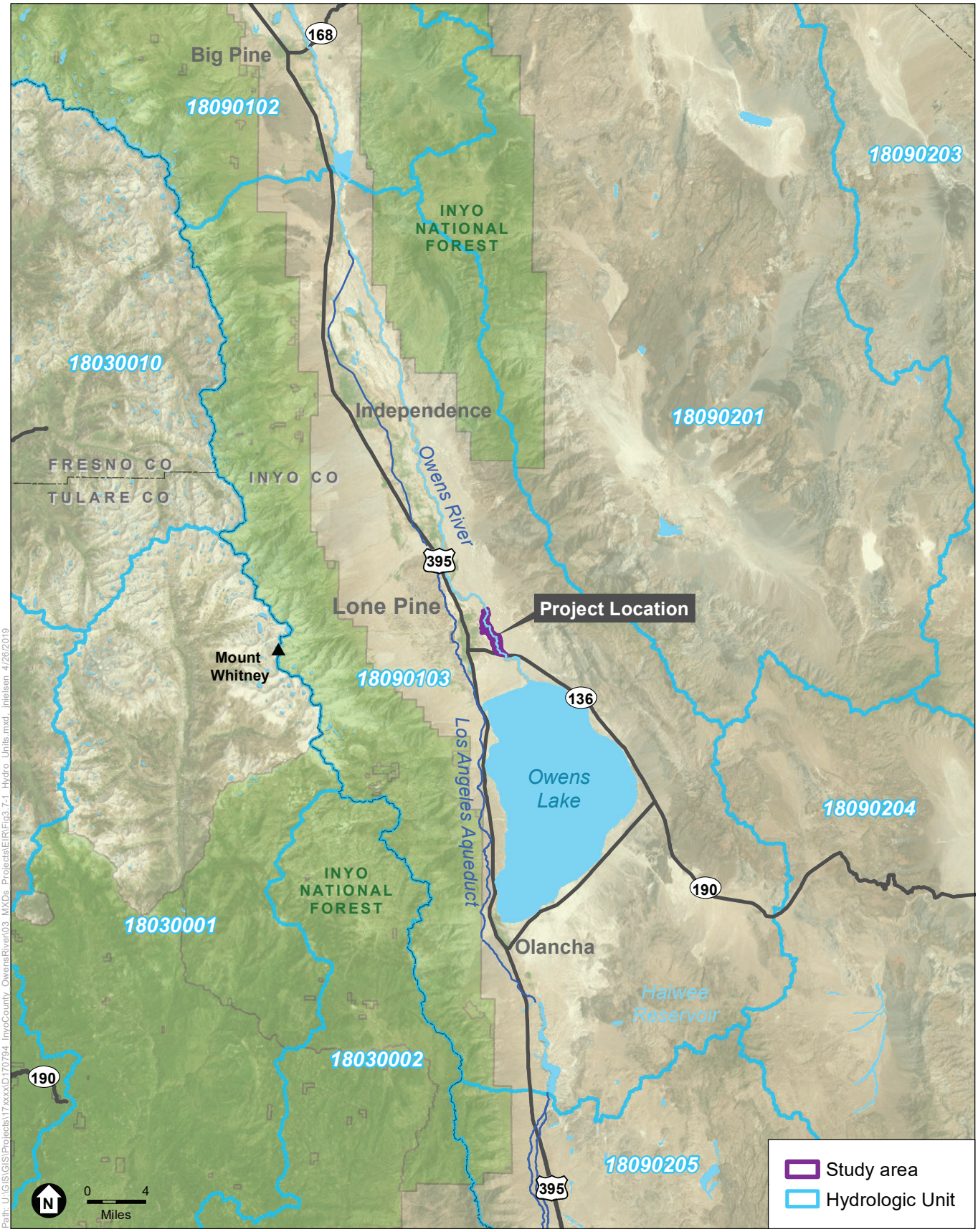
The proposed project is located along an approximately 6.3-mile stretch of the Lower Owens River, located near the town of Lone Pine in Inyo County, California. The project is located in the Owens Valley, which is nestled between the Sierra Nevada mountain range on the west and the Inyo and White Mountain ranges on the east (USGS, 2017) (see **Figure 3.7-1**, Owens Valley Hydrologic Unit). The Owens Valley is characterized as high desert rangeland, with the Sierra Nevada rising more than 9,000 feet above the valley floor and including Mount Whitney, the highest mountain in the continental Unites States. Owens Valley includes one major river, the Owens River, and its many tributaries that drain the east face of the Sierra Nevada. These drainages form extensive coalesced alluvial fans along the west side of the valley.

The climate in the Owens Valley is greatly influenced by the Sierra Nevada, where precipitation primarily occurs from moisture-laden air-masses that originate over the Pacific Ocean and move eastward across the mountain range. Average precipitation at the valley floor is approximately five inches per year, which results in a semiarid to arid climate. Vegetation is primarily located around the Owens River, tributaries, and depressions that collect water. Existing vegetation is characterized by species that are typically found in semiarid and arid climates. Additional information about the vegetation in the project area is in Section 3.3, *Biological Resources*.

The town of Lone Pine is in the lower portion of the Owens Valley at an elevation of 3,733 feet and supports a population of 1,655 residents (Digital Desert, 2019). The project area is located approximately 1.5 miles east of the town of Lone Pine. The project area is defined by the perimeter of the Lower Owens River floodplain from Lone Pine Narrow Gauge Road south to Highway 136 (see Figure 2-2). The project area is largely a natural setting and is owned by the Los Angeles Department of Water and Power (LADWP). The Lower Owens River floodplain varies in width from 0.12 to 0.33 miles.

Hydrologic Setting

The project area is located in the Owens Valley Hydrologic Unit (HU) 18090103, which comprises about 3,300 square miles, as shown on **Figure 3.7-1.** The Owens Valley HU drainage area extends from the crest of the Sierra Nevada mountains on the west to the crest of the Inyo and White Mountains on the east, and the crest of the Coso Mountain Range to the south and the crest of the volcanic hills and mountains that separate the Mono Basin and the Adobe Valley from the Owens Valley in the north (USGS, 2017).



SOURCE: ESRI; National Hydrography Dataset.

Owens River Water Trail

Figure 3.7-1
Owens Valley Hydrologic Unit

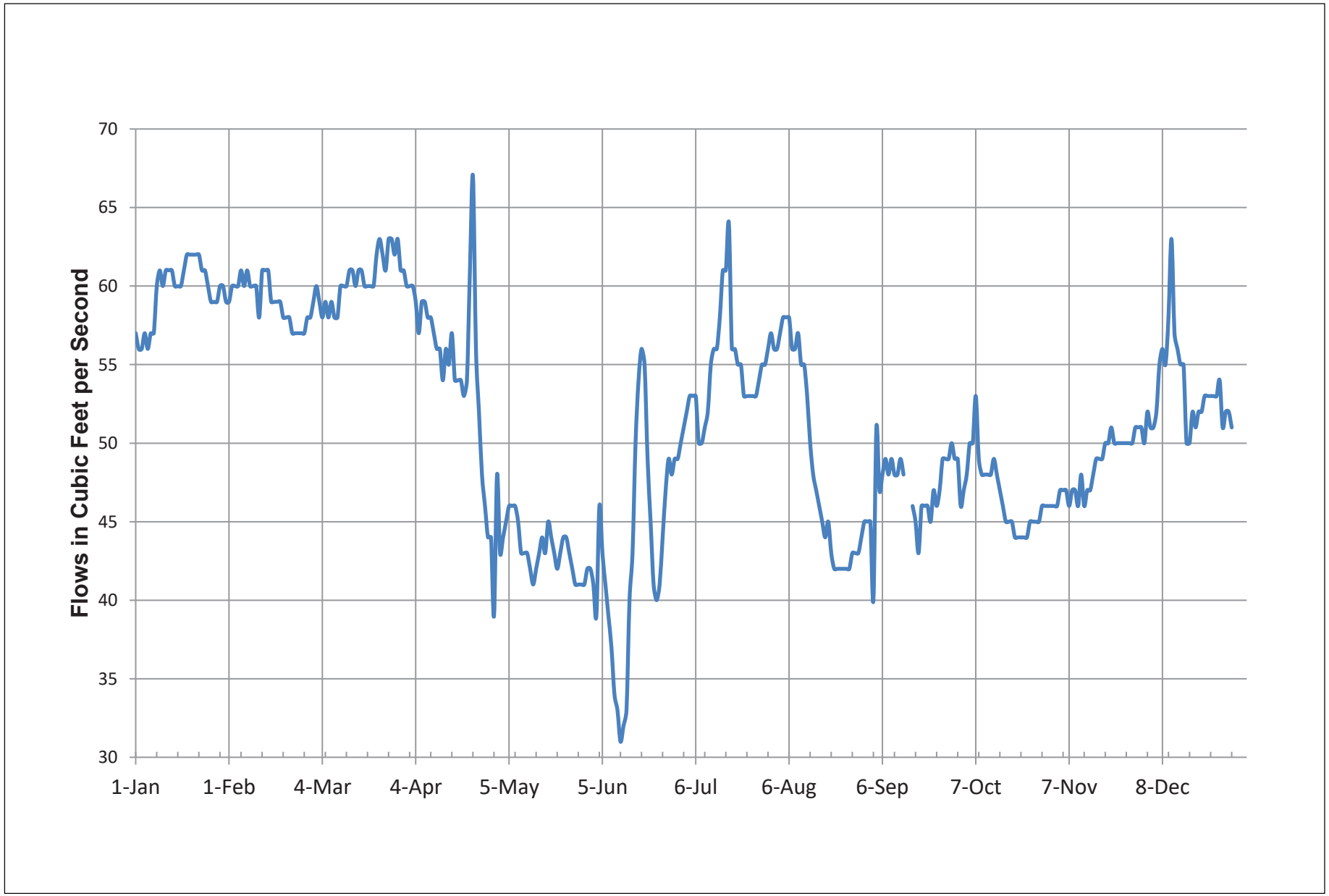
ESA

The Owens Valley HU is a closed drainage system, where the Coso Mountain Range forms a hydrologic barrier at the south end of the Owens Valley and prevents down-valley streamflow at Owens Lake. This formation also blocks any significant natural groundwater outflow from the lower end of the valley.

Surface Water Hydrology

Precipitation that drains from the Sierra Nevada to the valley floor is captured by the Owens River or the Los Angeles Aqueduct. The Owens River is approximately 180 miles long and originates in the Sierra Nevada north of the project area and the hydrologic basin. The river flows southeast through the Lake Crowley Reservoir and descends through the Owens River Gorge before emerging at the north end of the Owens Valley, just north of the City of Bishop, and then terminating at Owens Lake south of Lone Pine (Figure 3.7-1). In the area around Bishop, the Lower Owens River is diverted through numerous small channels to irrigate the surrounding farmland. Approximately 10 miles southeast of Big Pine, most of the remaining river is diverted into the Los Angeles Aqueduct (see Figure 3.7-1). As shown below in **Figure 3.7-2**, below this diversion point, a permanent base-flow of 40 to 50 cubic feet per second (cfs) is maintained in the river with periodic higher seasonal habitat flows of up to 200 cfs (ESA, 2019a; included in this Draft EIR as Appendix B-1). The annual amount and flow rate depends on the runoff amount in Owens Valley each year. Intermittently, flows during the summer months can exceed 70 cfs. The remaining river flows through the southern valley, to the east of Independence and Lone Pine, through the project area, to a point south of the project area and just north of Owens Lake, where a pump station diverts water for dust abatement on Owens Lake or, alternatively, to the Los Angeles Aqueduct. A small amount of water flows below the pump station through the Lower Owens River Delta before entering the Owens Lake bed at the southern end of the Owens Valley. Presently, due to the changes to the water budget of the Owens Lake, evaporation now exceeds inflow except in very wet years, resulting in a dry lakebed (USGS, 2017). The natural, meandering channel of the Lower Owens River is generally about 5 to 50 feet wide and about 3 to 6 feet deep, with a silt, sand, and clay bottom.

Within the project area under existing conditions, base flows along the waterway are greatly impeded by areas of existing vegetation and spread laterally forming marshy areas. The marshy areas developed after most of the water supplying the Lower Owens River was diverted over the past century. The diversions reduced the flow velocity, which in turn resulted in the buildup of sediment and vegetation, and the expansion of marshy areas that further restrict flow. These marshy areas have formed occlusions (i.e., blockages restricting flow) along several segments of the waterway, as discussed in detail in Chapter 2.0, *Project Description*. While a meandering channel is present in many areas, vegetation has overgrown the channel in several areas. These marsh regions can function as a thickly vegetated floodplain with no continuous channel, with shallow inundation extending for up to 100 feet or more laterally in some areas. During elevated flows—for example during habitat flow releases—these areas tend to overtop, stirring organic-laden sediments into the water column (LADWP and Inyo County, 2017).



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SOURCE: LADWP and Inyo County, 2019

Owens River Water Trail

Figure 3.7-2
Flow in Lower Owens River – Pumpback Station - 2018

ESA

Surface Water Quality

Owens Valley is located in the Lahontan Region and is subject to oversight by the Lahontan Regional Water Quality Control Board (RWQCB). Surface-water and groundwater quality objectives for the project area are described in the Water Quality Control Plan for the Lahontan Basin Region North and South (Basin Plan; RWQCB, 2016). The Basin Plan describes surface and groundwater quality objectives for the Owens Valley Hydrologic Area that have been established to protect the existing and potential beneficial uses of surface and groundwater in the region. The beneficial uses established by the RWQCB for the Owens River below LADWP's intake dam 10 miles south of Big Pine are listed in Section 3.7-2, *Regulatory Framework*.

In general, water quality objectives for surface waters may include numerical and narrative objectives for constituents such as ammonia, bacteria (coliform), biostimulatory substances, chemical constituents, chlorine (total residual), color, dissolved oxygen, floating materials, oil and grease, non-degradation of aquatic communities and populations, pesticides, pH, radioactivity, sediment, settleable materials, suspended materials, taste and odor, temperature, toxicity, and turbidity. In the project area, there are specific water quality objectives for constituents such as total dissolved solids, chloride, and nitrogen, as described below in Section 3.7.2, *Regulatory Framework*. Water quality concerns in the Lahontan Region are largely related to nonpoint sources (including erosion from construction, timber harvesting, and livestock grazing), stormwater, acid drainage from inactive mines, and individual wastewater disposal systems (RWQCB, 2016). However, according to the State Water Resources Control Board (SWRCB) Impaired Water Bodies 2014/2016 Integrated Report database, the Owens River is not currently listed on the Clean Water Act 303(d) list for any pollutants (SWRCB, 2019).

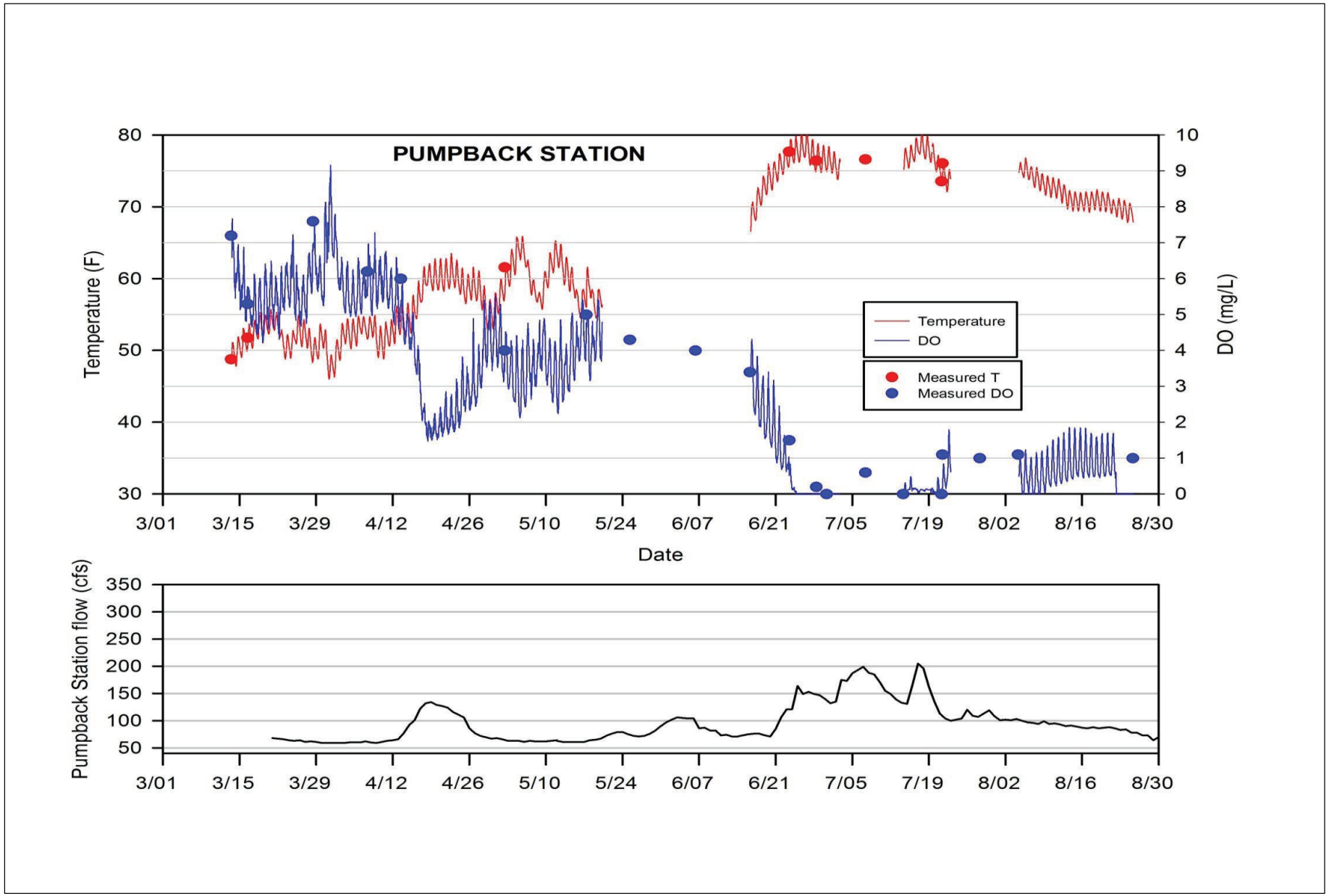
Nonetheless, water quality concerns within the project area and its vicinity along the Lower Owens River have focused primarily on dissolved oxygen and temperature and the ability to support beneficial uses related to fishes (LADWP and Inyo County, 2015, 2017). Dissolved oxygen has been specifically identified as a key concern of the RWQCB within the waterway, including within the project area. During typical river operations, flows of less than approximately 70 cfs allow the buildup of organic material along the river. This organic material is derived from periphyton,[1] as well as submerged and emergent aquatic vegetation that can be found along the waterway. Over time, this material can build up considerably, and its buildup is fostered by existing thick stands of emergent vegetation along the waterway.

[1] Periphyton is a complex mixture of algae, cyanobacteria, heterotrophic microbes, and detritus that is attached to submerged surfaces in most aquatic ecosystems.

In the project area, the concentration of oxygen available in the Lower Owens River is affected by temperature. In general, the concentration of dissolved oxygen (at the saturation point) decreases with increasing temperature. In the Lower Owens River, while winter and early spring water temperatures typically range from 40 to 60 degrees Fahrenheit, summer temperatures typically vary between 65 and 75 degrees Fahrenheit (LADWP and Inyo County, 2015). Daily average dissolved oxygen concentrations in the winter and early spring typically range from 6 to 9 milligrams per liter (mg/L). During warm summer months, however, higher water temperatures drive dissolved oxygen concentrations down, resulting in dissolved oxygen concentrations that usually range from 3 to 6 mg/L.

Reductions of dissolved oxygen concentrations to below the threshold for fish stress (1.0 mg/L) can result in fish kills and many have been observed over the last century with recent fish kills observed in 2013, 2017, and 2018 (LADWP and Inyo County, 2019). For example, a sudden reduction of dissolved oxygen occurred during summer season in the Lower Owens River upstream of the project area in 2017 (LADWP and Inyo County, 2018). This condition influenced dissolved oxygen concentrations at the Pumpback station, as shown in **Figure 3.7-3**. Comparison to flow rates indicates that the observed reductions in dissolved oxygen concentration were apparently initiated by in-stream flows that exceeded approximately 70 to 75 cfs, when water temperatures were also above 65 degrees Fahrenheit. Flows occurring at this rate are apparently sufficient to mobilize organic bottom sediments. During summer months when the microbial community is highly active, in-stream degradation of these suspended sediments results in the rapid consumption of oxygen in stream, resulting in a decline in dissolved oxygen concentration. The buildup of organic matter in sediments is greatly facilitated in areas of the river where flow occlusions (i.e., thick emergent vegetation) has resulted in localized shallow ponding and stagnant water.

Other water quality parameters within the river are generally considered to be sufficient to support beneficial use. Turbidity values during normal flow conditions are typically below 5 nephalometric units (NTU); conductivity has been found to typically vary from approximately 0.3 to 0.5 microseimens per centimeter (mS/cm), and pH typically ranges from 7.2 to 8.2. These parameters, as well as temperature, dissolved oxygen, and a handful of other physical water quality parameters are monitored through targeted water quality sampling and monitoring, conducted by the LADWP as a requirement of the Lower Owens River Program (LORP) during infrequent events that could cause detrimental water quality (LADWP and Inyo County, 2015).



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SOURCE: LADWP and Inyo County, 2019

Owens River Water Trail

Figure 3.7-3
Temperature, Dissolved Oxygen, and Flow in Lower Owens River – Pumpback Station - 2017

ESA

Groundwater Hydrology

Owens Valley

The proposed project is located within the Owens Valley groundwater basin. The Owens Valley groundwater basin spans 661,000 acres and has a total capacity of approximately 30,000,000 acre-feet (DWR, 2004). The Owens Valley groundwater basin extends from the Haiwee Reservoir in the south and includes the Round, Chalfant, Hammil, and Benton Valleys (USGS, 2017). Recharge to the groundwater basin occurs primarily from runoff from the Sierra Nevada mountain range as a result of snow melt, as well as occasional rainfall and by direct infiltration of irrigation (Dawson and Belitz, 2012). The primary sources of discharge from this groundwater basin include pumping wells, evapotranspiration, and underflow to the Owens Lake dry lakebed. Uses of groundwater in the Owens Valley basin include public water supply, domestic water supply, and irrigation.

The USGS conducted a detailed evaluation of the Owens Valley hydrologic system, including both surface water and groundwater (Danskin, 1998). Their study concluded that virtually all groundwater in the Owens Valley is derived from precipitation falling within the basin. Groundwater recharge occurs primarily as water infiltrating into the alluvial fans along the Sierra Nevada Mountains, and to a much lesser degree, the White and Inyo Mountains. The groundwater flow direction largely mimics the topographic surface flowing from the Sierra Nevada Mountains downslope and east to the Owens River, and from the White and Inyo Mountains downslope and west to the Owens River. Some groundwater is discharged through pumpage and evapotranspiration on its way to the river; the rest flows to the Owens River. Once within the Owens River alignment, groundwater flow generally follows the river alignment as discharge to the river and as underflow to the south, draining into Owens Lake, where most is lost to evapotranspiration.

The USGS study noted that until recently, the Owens River was almost entirely a gaining stream, that is, groundwater discharged into the river supporting its flow for the entire length down to Owens Lake (Danskin, 1998). Currently, the majority of the Owens River still is a gaining stream. In localized areas with significant pumpage, such as around Big Pine, groundwater flow directions have been altered and the local section of Lower Owens River around Big Pine is sometimes a losing stream (surface water in the river infiltrates down into the groundwater). However, south of the Big Pine area, the Lower Owens River continues to be a gaining stream year-round all the way to Owens Lake.

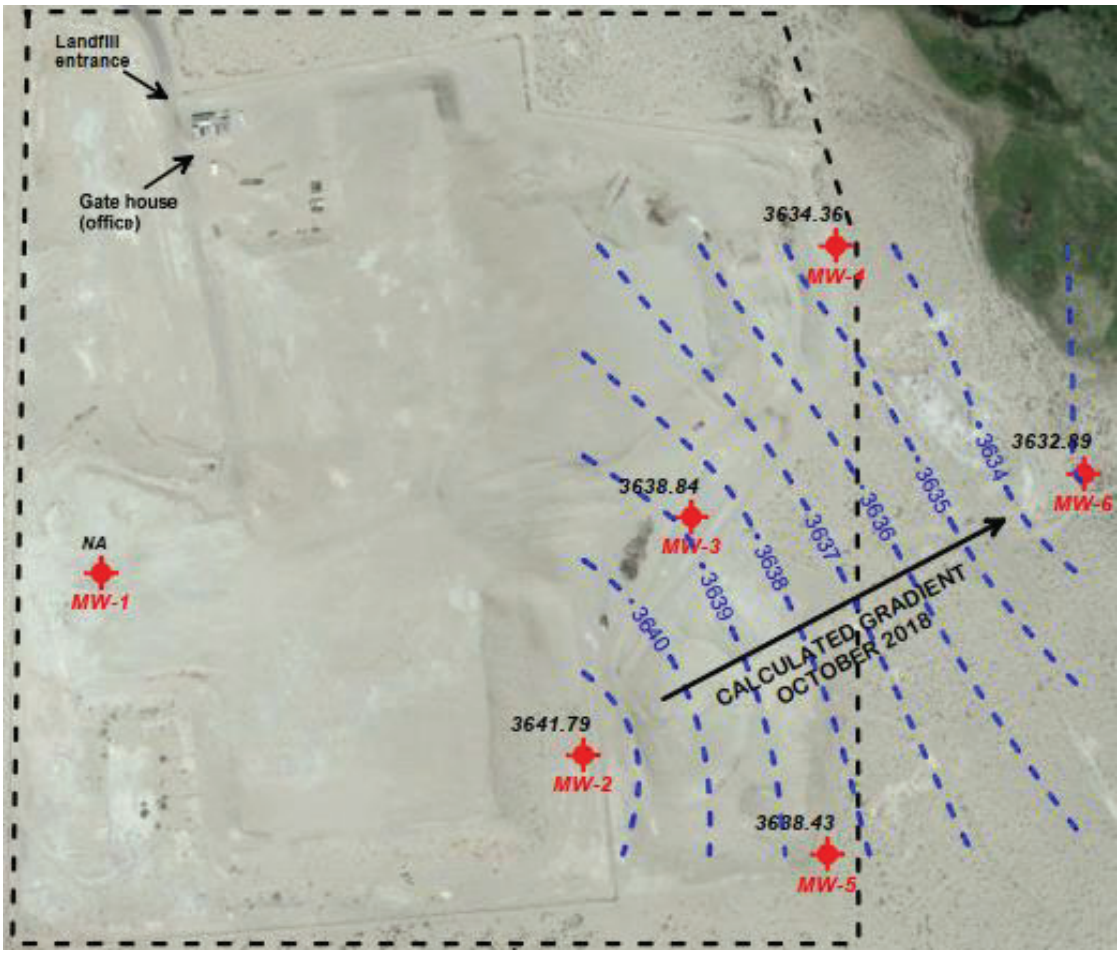
This gaining stream condition includes the proposed project area, which has never been observed to go dry (Danskin, 1998). Note that the project area is located towards the lower elevation southernmost portion of Owens Valley. Consequently, the floodplain in the project area is less sensitive to river water surface elevation because groundwater levels, and the floodplain vegetation it supports, are not entirely dependent on the river's surface water flow within the project area.

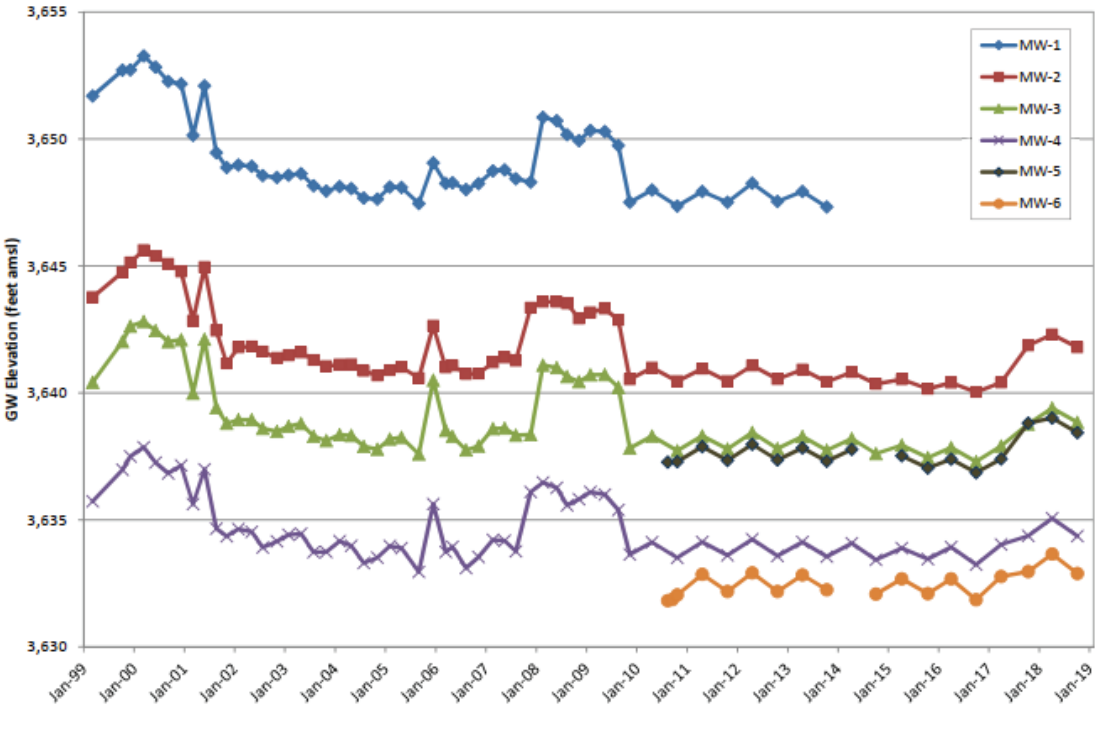
Lone Pine Landfill

The Lone Pine Landfill is located east of Lone Pine and about 1/3-mile west of the Lower Owens River (Team, 2019). This location is also adjacent to the project area and about 1-3/4-miles south of the Lone Pine Narrow Gauge Road at the northern end of the proposed project area. As required by the landfill's operating permit, the landfill has a groundwater monitoring well network, established in 1999, that monitors groundwater elevations, flow directions, and water quality. The initial monitoring frequency was quarterly; the current frequency is semiannual.

Currently, there are six monitoring wells, with five of the six wells on the downgradient side of the landfill. This also means that five of the six wells are located between the landfill and the Lower Owens River, with the most downgradient well within about 200 feet of the river. The numbering scheme of the wells goes from the most upgradient wells (MW-1 and MW-2) to most downgradient wells (MW-4 and MW-6). The landfill monitoring network is shown on **Figure 3.7-4**, and includes the groundwater elevation contours from the October 9, 2018, monitoring event. As shown, the direction of groundwater flow is toward the river. This indicates that groundwater is supporting flow in the river; that is, the Lower Owens River within this area is a gaining stream.

The most recent monitoring report also includes all groundwater elevation monitoring data from 1999 through October 2018. The report provides a hydrograph comparing the groundwater elevations of all six wells for all monitoring events, also shown on Figure 3.7-4. Note that the groundwater elevations of the downgradient wells (MW-4 and MW-6) are always lower than the groundwater elevations of the upgradient wells (MW-1 and MW-2). This indicates that the direction of groundwater flow has always been toward the Lower Owens River during all monitoring events since 1999, with no exceptions. This also means that groundwater is always supporting flow in the river; that is, the Lower Owens River within this area is a gaining stream. Note that the elevation at the edge of the nearby Lower Owens River is about 3,630 feet above mean sea level, with the center portions being at lower elevations. With the measured groundwater elevations in Well MW-6 always measured at more than 3,631 feet above mean sea level, and groundwater elevations in the other landfill wells higher than those in the other wells, the data indicates that the Lower Owens River has always been a gaining stream in this portion of the Lower Owens River.





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SOURCE: Team 2019

Owens River Water Trail

Figure 3.7-4
Groundwater Elevations at Lone Pine Landfill

ESA

Groundwater Quality

The chemical constituents in groundwater within the Owens Valley are predominantly calcium and bicarbonate, with total dissolved solids (TDS) generally less than 300 milligrams per liter (mg/l) (Danskin, 1998). Closer to Owens Lake, the concentrations of TDS and other constituents increase. Groundwater quality from Well T-892, located near the Lone Pine Narrow Gauge Road Bridge at the northernmost end of the proposed project area, is summarized below in **Table 3.7-1** (LADWP, 2013). Note the constituent concentrations remain relatively low, with TDS at 330 mg/L and all concentrations within the 90th percentile Water Quality Objectives listed in the Basin Plan (see Basin Plan below in Section 3.7.2, *Regulatory Framework*).

Table 3.7-1. Concentrations in Well T-892

Parameter	Concentration
pH	7.7
Total Dissolved Solids	330
Dissolved Oxygen	1.24
Alkalinity	250
Total Organic Carbon	1.5
Sodium	63
Nitrate	<0.03
Chloride	24
Sulfate	1.1

Notes:
All concentrations in milligrams/liter except for pH units
Concentrations below the detection reporting limit shown as less than the indicated limit
At the listed pH values, alkalinity is largely as bicarbonate

Flood Zone

The Federal Emergency Management Agency (FEMA) has designated the project area along the Lower Owens River as a Zone A Special Flood Hazard Area (FEMA, 2011). Special Flood Hazard Areas are defined as areas that will be inundated by a flood event having a 1-percent chance of being equaled or exceeded in any given year, where the 1-percent chance flood is referred to as the "base flood" or "100-year flood." Zone A designations are areas where no base flood elevation has been calculated; the base flood elevation is the water surface elevation associated with a 1-percent chance flood.

While the project area is located in and adjacent to the Lower Owens River, flooding of the Owens River is not as common as tributary (i.e., Birch Creek, Independence Creek, and Lone Pine Creek) flooding because the river is predominantly fed by snowmelt rather than immediately by rains. In years when runoff from snow melt is predicted to be normal or higher, a flushing flow of up to 200 cfs (actual flow depends on water availability) is released from Tinemaha Reservoir (immediately upstream of the Lower Owens River) to the river in the early spring, which is typically the largest amount of water in the Lower Owens River. Note, however, that river flow

remains highly regulated due to LADWP diversions. As a result, the range of flows that are now typical of the river are significantly smaller than historic flows that once occurred.

3.7.2 Regulatory Framework

Federal

Clean Water Act

The CWA regulates discharges into "waters of the United States" and establishes a regulatory framework to reduce pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. A key component of the CWA is Section 402, which regulates point-source and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the SWRCB oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. General permits in California designed for compliance with the NPDES program include the Construction General Permit issued by the SWRCB. The Construction General Permit and the MS4 permits discussed below comply with Section 402.

National Pollutant Discharge Elimination System Program

The NPDES permit program is administered in the State of California by the SWRCB and RWQCBs under the authority of the U.S. Environmental Protection Agency (USEPA) to control water pollution by regulating point sources that discharge pollutants into waters of the United States. If discharges from industrial, municipal, and other facilities go directly to surface waters, those project applicants must obtain permits. An individual NPDES permit is specifically tailored to a discharge to waters of the United States. A general NPDES permit covers multiple facilities within a specific activity category such as construction activities. A general permit applies with same or similar conditions to all dischargers covered under the general permit. The proposed project would be covered under the general permits discussed below.

CWA Section 401: Water Quality Certification

Section 401 of the CWA (33 U.S.C. §1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters, including the crossing of rivers or streams during road, pipeline, or transmission line construction, to obtain a certification from the State in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards. The State agency responsible for implementing section 401 of the CWA in California is the Regional Water Quality Control Board. Because the Project requires a Federal permit, a 401 water quality certification would be required.

CWA Section 402: National Pollutant Discharge Elimination System (NPDES)

Section 402 of the CWA regulates construction-related storm water discharges to surface waters through the NPDES program, administered by the USEPA with implementation authority delegated to the State Water Resources Control Board (SWRCB), in California. An NPDES Construction General permit is required for all projects that disturb 1 acre or more of land (discussed further below in section 3.9.3.2, State). Therefore, the Project would require an

NPDES General Construction permit from the LARWQCB, described further below under NPDES Construction General Permit.

CWA Section 404: Discharge of Dredged or Fill Material

Section 404 of the CWA (33 U.S.C. §1344) authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the U.S. at specified disposal sites (33 C.F.R. Part 323). The term "waters of the U.S." includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations (C.F.R.) and applicable Corps guidance. The selection and use of disposal sites will be in accordance with guidelines developed by the Administrator of USEPA in conjunction with the Secretary of the Army and published in 40 C.F.R. Part 230 (the "guidelines"). 40 C.F.R. Part 230 subpart C includes water quality aspects of dredge and fill activities. Among other topics, these guidelines address discharges, which alter substrate elevation or contours, suspended particulates, water clarity, nutrients and chemical content, current patterns and water circulation, water fluctuations, and salinity gradients. The proposed project would require a 404 Permit due to fill activities associated with construction of the boat launch and take-out as well as placement of spoils during construction. (See also Section 3.4, *Biological Resources*, for details about fill in waters of the U.S.).

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act, which consists of Water Code Division 7 and Related Sections in the California Water Code, is California's statutory authority for the protection of water quality. The Porter-Cologne Water Quality Act is promulgated in the California Code of Regulations Title 22. Under this act, the State must adopt water quality policies, plans, and objectives that protect the State's waters. The act sets forth the obligations of the SWRCB and RWQCBs pertaining to the adoption of Basin Plans and establishment of water quality objectives. Unlike the federal CWA, which regulates only surface water, the Porter-Cologne Act regulates both surface water and groundwater.

Lahontan Regional Water Quality Control Board Basin Plan

The project area is located within Inyo County, which is governed by the Lahontan RWQCB. The Lahontan RWQCB's Basin Plan identifies beneficial uses and sets water quality standards for the surface and ground waters of the region, as discussed previously. It also identifies general types of water quality problems that can threaten beneficial uses in the region, then identifies control measures for these problems. Water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. The following beneficial uses are identified for the Lower Owens River, within and in the vicinity of the project area:

- Municipal and Domestic Supply (MUN)
- Agricultural Supply (AGR)
- Groundwater Recharge (GWR)
- Freshwater Replenishment (FRSH)
- Contact Recreation (REC-1)
- Noncontact Recreation (REC-2)
- Commercial and Sportfishing (COMM)
- Warm Freshwater Habitat (WARM)
- Cold Freshwater Habitat (COLD)
- Wildlife Habitat (WILD)
- Preservation of Biological Habitats of Special Significance (BIOL)
- Rare, Threateaned, or Endangered Species (RARE)
- Spawning, Reproduction, and Development (SPWN)

Table 3.7-2 summarizes water quality objectives for the Owens Hydrologic Unit, and for the Lower Owens River below Tinemaha Reservoir, specifically.

TABLE 3.7-2
WATER QUALITY OBJECTIVES FOR THE OWENS RIVER BELOW TINEMAHA RESERVOIR

Constituent	Water Quality Objective (Annual Average)	Water Quality Objective (90th Percentile)
Total Dissolved Solids	207	343
Chloride	17.9	42.0
Sulfate	26.8	59.0
Fluoride	0.57	0.90
Boron	0.61	1.50
Nitrate as nitrogen	0.60	1.1
Total Nitrogen	0.9	1.5
Phosphate	0.32	0.56

Source: LRWQCB, 2016.
All units in milligrams per liter

The RWQCB also outlines various water quality objectives that apply to all surface waters in its jurisdiction. These include multiple parameters; however, dissolved oxygen has been identified as being especially relevant within the target segment of the Lower Owens River, including within the project area. The Lahontan RWQCB's water quality objective for dissolved oxygen is as follows:

- Dissolved oxygen concentration, as a percent saturation, shall not be depressed by more than 10%, nor shall the minimum dissolved oxygen concentration be less than 80% of saturation. The concentration of dissolved oxygen at the saturation point decreases with increasing temperature.

In addition to these thresholds, the LORP implementation process has identified a target minimum threshold of 1.0 mg/L of dissolved oxygen in the river in order to ensure that harm to fish and/or fishkills are avoided.

NPDES Construction General Permit

Construction associated with the proposed project would disturb more than one acre of land surface affecting the quality of stormwater discharges into waters of the United States. The project would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than 1one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management "housekeeping"
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before the construction begins and must contain a site map that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list the type and placement of those BMPs that the applicant would use to protect stormwater runoff. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and

vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In the project area, the Construction General Permit is implemented and enforced by the Lahontan Region RWQCB, which administers the stormwater permitting program. Dischargers are required to electronically submit a notice of intent (NOI) and permit registration documents (PRDs) in order to obtain coverage under this Construction General Permit. Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a state Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a state Qualified SWPPP Practitioner. A Legally Responsible Person, who is legally authorized to sign and certify PRDs, is responsible for obtaining coverage under the permit.

Regional

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was adopted in 2014 and became effective January 1, 2015. SGMA gives local agencies the authority to customize groundwater sustainability plans to their regional economic and environmental needs and manage groundwater in a sustainable manner to protect groundwater resources. SGMA establishes a definition of sustainable groundwater management and a framework for local agencies to develop plans and implement sustainable management strategies to manage groundwater resources, prioritizes basins (ranked as high- and medium-priority) with the greatest problems (i.e., the undesirable results as discussed below), and sets a 20-year timeline for implementation.

The DWR and the SWRCB are the lead state agencies responsible for developing regulations and reporting requirements necessary to carry out SGMA. DWR sets basin prioritization, basin boundaries, and develops regulations for groundwater sustainability. The SWRCB is responsible for fee schedules, data reporting, probationary designations and interim sustainability plans.

SGMA requires the creation of a Groundwater Sustainability Agency (GSA) for medium- and high-priority groundwater basins in accordance with Water Code §10723 et seq. Each GSA is to develop and implement a Groundwater Sustainability Plan (GSP) in accordance with Water Code §10727 et seq. The GSP would describe how users of groundwater within the basin would manage and use groundwater in a manner that can be sustainably maintained during the planning and implementation horizon without causing undesirable results. SGMA defines undesirable results as follows:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies
- Significant and unreasonable land subsidence that substantially interferes with surface land uses
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

The State of California has designated the Owens Valley Basin 6-012.01 as a medium priority basin. The local Groundwater Sustainability Agency is the Owens Valley Groundwater Authority. For this medium priority basin, the GSA is required to submit a GSP to the DWR by 2022.

Inyo County General Plan

The Inyo County General Plan Public Safety and Conservation/Open Space Elements contain applicable policies relative to the project, which include the following:

Public Safety Element

Policy FLD-1.4 Channelization. The natural condition of watercourses is to be maintained whenever feasible. The County shall discourage the channelization of watercourses unless necessary for the protection of public safety. If alterations of a watercourse are found to be necessary, the alterations shall be engineered to preserve or restore the natural characteristics of the watercourse to the greatest extent possible.

Conservation/Open Space Element

Goal WR-2 Protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources.

Policy WR-2.1 Restoration. Encourage and support the restoration of degraded water surface and groundwater resources.

Policy WR-3.1 Watershed Management. Protect, maintain, and enhance watersheds within Inyo County.

Inyo-LADWP Long-Term Water Management Agreement

Over time, Inyo County and LADWP have engaged in management and rights disputes over Owens Valley water resources. Cooperative efforts between the County and LADWP during the last 25 to 30 years, however, have resulted in the formation of a unique long-term surface water and groundwater management plan for the Owens Valley. In 1991, a long-term water resources management agreement was approved. The overall goal of managing the water resources within Inyo County is to "avoid certain described decreases and changes in vegetation and to cause no

significant effect on the environment which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County."

Under the Inyo/Los Angeles Long Term Water Agreement the County and LADWP committed to re-watering the full 62-mile reach of the river as part of the LORP. The LORP also provides permanent water supplies to several lakes and ponds and two waterfowl and shorebird habitat areas, in all totaling approximately 1,800 acres of off-river habitat.

3.7.3 Thresholds and Methodology

Thresholds of Significance

Appendix G of the *CEQA Guidelines* recommends significance criteria for the evaluation of impacts related to hydrology and water quality in the project area. Based on the revised 2019 CEQA Guidelines,[2] this Draft EIR assumes implementation of the proposed project would have a significant impact related to hydrology and water quality if it would:

> **HYD-1:** Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
>
> **HYD-2:** Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
>
> **HYD-3:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surface, in a manner which would:
>
> (i) result in substantial erosion or siltation on- or offsite;
>
> (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
>
> (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
>
> (iv) impede or redirect flood flows
>
> **HYD-4:** Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to inundation; or
>
> **HYD-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The Initial Study was based on the CEQA Appendix G Checklist in effect at the time of the preparation of the Initial Study (see Appendix A of this EIR). Based on the nature of the proposed

[2] CEQA revisions, including revisions to Appendix G Checklist, were approved on December 28, 2018. The Initial Study was prepared in May 2018 and is based on the Appendix G Checklist in effect at that time.

project, there would be no impacts related to the following evaluation criteria for the reasons described below:

- The proposed project would result in no impact to Impact HYD-2 because groundwater supplies would not be used and the project would not substantially alter groundwater recharge. As discussed in Section 3.7.1, *Environmental Setting*, the Lower Owens River is a gaining stream throughout the project area and is therefore not dependent on recharge from the river to maintain groundwater levels.
- The project would result in no impact regarding Impact HYD-3iii since the project would not contribute runoff to the stormwater drainage system.
- With regard to Impact HYD-4, the project would not result in inundation from flood hazard, seiche, or tsunami.

For a brief discussion on why these issues areas were not further evaluated in this section, refer to Chapter 5, *Other CEQA Considerations*, of this EIR.

Methodology

Information for this assessment of impacts relative to hydrology and water quality is based on a review of literature research of relevant reports and maps, relevant laws and regulations, and site-specific hydraulic modeling and a geomorphic assessment conducted for this proposed project. This information was used to identify potential impacts to workers, the public, or the environment. A primary source of data and information was obtained through the hydraulic modeling and a geomorphic assessment, summarized further below.

The project would be regulated by the various laws, regulations, and policies summarized in Section 3.7-2, *Regulatory Framework*. Compliance by the project with applicable federal, state, and local laws and regulations is assumed in this analysis, and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now. Note that compliance with many of the regulations is a condition of permit approval.

Hydraulic Modeling

The following summarizes the hydraulic modeling conducted by ESA to inform the proposed project (ESA, 2019a). For a detailed discussion on the hydraulic models and the methodology of the Hydraulic Analysis, please refer to Appendix B-1 of this EIR.

ESA adapted existing hydraulic models of a portion of the project area to evaluate the effects of various proposed vegetation clearing and excavation scenarios to inform environmental review. The models were developed by Northwest Hydraulic Consultants in 2012 (NHC, 2012) and are one-dimensional HEC-RAS models of five non-contiguous representative sites within the Lower Owens River area. Each modeled area was approximately 2 miles in length, and channel geometry in the model was represented by approximately 60 to 80 river cross sections per model.

Of the five existing models, Plots 4 and 5 are located within the project area. The Plot 4 model covers approximately 2.2 miles of river and extends from 0.2 miles downstream of the Lone Pine

Narrow Gauge Road Bridge. The Plot 5 model covers approximately 2.5 miles of river ending 0.1 miles upstream of the Keeler Bridge.

While both the Plot 4 and Plot 5 models are within the project area, they are non-contiguous and do not cover the entire project area. It should be noted that the boat launch and take-out areas, as well as approximately one mile of river between the downstream extent of Plot 4 and the upstream extent of Plot 5, were not included in the models. ESA utilized the existing models "as-is" to represent a baseline condition.

Throughout the project area, the channel is characterized by areas of open water bordered by tules separated by short sections of channel that are either bridged or entirely occluded by tules, and in places, large woody debris. Plot 4 has a marsh region where the single channel splits into multiple flow paths with indistinct and discontinuous channels. Additionally, debris jams or beaver dams are present in the open water areas within the marsh, further contributing to shallow inundation over the valley floor. Field reconnaissance performed by ESA observed that there was not an obvious main channel through this marsh area. This area is essentially acting as a large densely vegetated floodplain and extends across the entire valley floor. At the downstream end of this area, there is a large drop in the water surface elevation where the shallow floodplain flows rejoin the channel.

Baseline Models

Channel geometry and vegetation conditions are represented in the one-dimensional HEC-RAS models based on the surveyed channel cross sections, from surveys conducted by LADWP in 2009 and 2010. Survey points describe the coordinates and elevation used to construct the channel and floodplain model geometry and additional details such as the location of channel banks, thalweg, boundaries of tules and other vegetation, as well as other channel characteristics. The roughness parameter, Manning's n, is spatially varied across the model cross section to represent zones of differing hydraulic roughness. The model uses different Manning's n values to represent roughness conditions associated with overbank vegetation, tules, and open water. In areas of particularly dense tules, ineffective flow areas were also specified in the model, simulated as part of the wetted area of the channel, but not contributing to flow conveyance.

The Plot 4 and Plot 5 models were calibrated using measured water surface elevations taken along the length of both modeled areas. Water surface elevations were surveyed during periods of base flow between 2009 and 2010 with daily discharges measured at the Keeler Bridge of 49 cubic feet per second (cfs) and 48 cfs for the Plot 4 and Plot 5 surveys, respectively. Roughness values were adjusted for the overbank vegetation, tules, and open water sections of channel to achieve best fit between the simulated and observed water levels. For the Plot 4 model, adjusting the horizontally varied roughness parameter alone did not provide the increase in water surface levels needed to match observed water levels. In areas where tules spanned the channel, the obstruction option in HEC-RAS was applied to raise the bed level to 2 to 3 feet below the observed water surface to further increase water levels. For the Plot 5 model, the obstruction option was not used and calibration was performed by adjusting roughness values. The calibrated models were shown to generally reproduce observed water levels for the base flow condition to within 0.5 feet.

In both the Plot 4 and Plot 5 model areas there are a number of secondary channels that are active at base flow and/or higher discharges. Where possible, the flow was modeled into and returning from major secondary channels at various main channel discharges. Five secondary channels were modeled in Plot 4 and four secondary channels in Plot 5. Additional qualitative calibration was conducted using aerial imagery showing the extent of inundation at base flow and at higher flows to determine when secondary channels were connected to the main channel. Flow into the secondary channels was represented as split reaches, where secondary channel topography data were available, or as flow over a lateral weir where topography data were not available. In the models provided to ESA, secondary channels were not explicitly represented; however, flows in the main channel were varied longitudinally within the HEC-RAS models to represent flow losses and gains due to flow into and re-entry from secondary channels as calculated by NHC.

Field reconnaissance was performed by ESA in May 2018 to map the location and size of occlusions to inform hydraulic model design and support estimation of construction quantities and costs. The models were adapted from the NGVD 29 vertical datum to NAVD 88 to correspond to elevations surveyed by ESA during field reconnaissance. All subsequent design scenario modeling was performed using the NAVD 88 vertical datum.

Design Model Scenarios

ESA adapted the model geometry for the Plot 4 and Plot 5 models to represent five design scenarios simulated to assess the potential effects of vegetation clearing and occlusion removal and project designs. The five scenarios are summarized below in **Table 3.7-3**.

Table 3.7-3. Summary of Design Scenarios

Scenario Conditions	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Clearing Vegetation along Entire Length	Minimum of 10 feet	Minimum of 10 feet	Minimum of 10 feet	Minimum of 6 feet	Minimum of 10 feet
Excavation Location	At mapped occlusions	Along entire project length	Only in marsh region to create continuous 10 foot-wide channel	Only in marsh region to create continuous 6 foot-wide channel	In marsh region to create continuous 15 foot wide channel and at remaining mapped occlusions
Excavation Dimensions	10 foot-wide section at 7 foot below *existing* water surface elevation	10 foot-wide section at 4 foot below *design* water surface elevation	10 foot-wide channel at uniform slope through marsh region	6 foot-wide channel at uniform slope through marsh region	• 15 foot-wide channel at uniform slope through marsh region • 15 foot-wide excavation to 1 foot below existing ground surface at occlusions to remove tule roots

Source: ESA, 2019a

Boundary Conditions

Hydraulic model simulations were conducted assuming steady-state conditions (flow not varying over time). The data needed for steady-state modeling were flow (discharge) for the upstream boundary condition and stage (water surface elevation) for the downstream boundary condition. Baseline and design scenario modeling were performed for two simulated discharges.

Under the provisions of the LORP, LADWP is required to maintain a minimum discharge of 40 cfs at all times throughout the Lower Owens River. Due to evapotranspiration losses, base flow releases are frequently in excess of the 40 cfs minimum discharge to meet the legal requirement throughout the LORP. Flows measured by LADWP during a base flow condition in 2009 were 49 cfs and 48 cfs in Plot 4 and Plot 5, respectively. Daily flows can be as low as 40 cfs, but fluctuate near 50 cfs on average. As such, the observed flows of 49 cfs and 48 cfs for Plot 4 and Plot 5, respectively, were selected to simulate the base flow condition in the project area.

In addition to a guaranteed base flow discharge, the LORP provides for seasonal habitat flows up to 200 cfs in proportion to snowmelt runoff. A seasonal habitat flow study was conducted by LADWP in June 2011. A maximum flow of 205 cfs was released to the Lower Owens River. Significant flood attenuation was observed during the habitat flow pulse with discharge measured at Keeler Bridge, the approximate downstream extent of the project area, at 75 cfs. Seasonal habitat flows in the model were therefore simulated using 75 cfs for both Plot 4 and Plot 5.

The downstream stage boundary was simulated as normal depth for Plot 4 and as a known water surface elevation for Plot 5. Under the normal water surface boundary condition, the river stage is calculated assuming uniform flow given a water surface slope. The slope specified for the normal

stage boundary was 0.0006 feet/foot to match the slope of the channel bed near the downstream boundary of Plot 4. A known water surface stage boundary was specified for Plot 5 because the downstream extent of the model was just upstream from the older Keeler railroad bridge, which acts as a hydraulic control structure causing a backwater upstream of the structure. Known water surface values were derived from the stage-discharge relationship from the Keeler measuring station.

Model Limitations

Hydraulic model results are intended to be used to compare relative differences between scenarios with regards to the project goal of recreational navigability and the requirements of the identified construction methods.

In addition, the model considers only surface water. As discussed above in Section 3.7.1, *Environmental Setting*, groundwater is known to discharge to the river along the project area. The constant discharge of groundwater to the river serves to maintain a minimum water surface elevation. The constant supply of groundwater to the surface water flow in the river may buffer the surface water elevation fluctuations predicted by the model (described below). ESA's staff observed that at base flow, secondary channels contained water even though the modeling predicted little or no secondary channel activity. It is hypothesized that the inundation in secondary channels is supported by the level of the groundwater table. No piezometer or well data were available for the project site to assess surface water-groundwater interactions.

Results

Results of the hydraulic simulations are provided in the Hydraulic Analysis in Appendix B-1 of this EIR. Model results for all design scenario simulations at base flow show a decrease in average water surface elevation relative to the baseline scenario model results. Removing occlusions or excavating a uniform channel through the marsh region results in a reduction in wetted width. Design scenario simulation results suggest that channel clearing, widening, or excavation will increase conveyance and decrease the water depth over the project area. This is supported by an increase in average channel velocity across all modeled design scenarios relative to the baseline scenario model. Hydraulic model results suggest that for all design scenarios recreational passage of paddle craft would be possible. While no minimum depth value was established for recreational passage, the minimum depth for all design scenarios predicted was 1.6 feet (Scenario 1 in Plot 5), while average depth values were in the range of 3.4 to 5.1 feet. The project description is based on Scenario 5, which is modeled to have a minimum depth of 1.7 feet and average depth of 4.1 feet. (See Chapter 4, Alternatives, for an explanation of why Scenarios 1 through 4 were not selected for the proposed project.) The decrease in water surface elevations for design scenarios suggest that overbank inundation will be reduced in frequency and magnitude for all design scenarios. However, as noted above in Model Limitations, the constant discharge of groundwater to the river maintains flow in the river, which in turn maintains water flow in some secondary channels.

Geomorphic Assessment

The following summarizes the geomorphic assessment conducted to inform the proposed project (ESA, 2019b). For a detailed discussion on the methodology and results of the Geomorphic Assessment, please refer to Appendix C of this EIR.

Scope and Limitations

ESA conducted a fluvial geomorphic assessment to estimate river channel morphology responses to the proposed project excavation, evaluate (per available information) sediment transport potential under the current river management regime, and evaluate project sustainability following construction. ESA utilized field observations, aerial photography, the above-described hydraulic model, and other information as provided by Inyo County to review historic and existing river conditions and estimate future river conditions. Within the scope of the assessment, ESA is not able to deterministically or empirically model or predict future river behavior over two decades, but rather ESA used available data and applied geomorphology principles to provide an understanding of expected patterns and trends.

ESA made suspended sediment transport and channel bed composition measurements at the upstream and downstream ends of the project reach. During field data collection flow in the Lower Owens River through the project reach was approximately 46 cfs. Suspended sediment measurements were made at the Lone Pine Narrow Gauge Road bridge (upstream end) and at the water control structure (downstream end) using a handheld, iso-kinetic suspended sediment sampler. Samples were sent to a lab for processing. To assess bed sediment composition, bed material samples were taken at the same two upstream and downstream locations. Bed material samples were collected from the bed surface (approximately the upper three inches) with a square-nosed shovel and placed in a plastic sand bag.

ESA used the output from the previously discussed one-dimensional hydraulic model to quantitatively assess existing and project condition hydraulics with respect to channel stability and sediment transport potential, including specific stream power and shear stress. The Lower Owens River is a sinuous, low gradient stream, and there are numerous complex remnant channel segments on the floodplain that are inundated by higher flows and groundwater movement. The existing model's capabilities for simulating complex multi-directional flows on the floodplain and the interaction between the sinuous channel and the floodplain are limited, and therefore the model developed for this study is primarily limited to main channel hydraulic conditions. The maximum flows that can be reliably analyzed with the existing model for Plots 4 and 5 (i.e., the model reaches that are within the project reach) are 80 and 100 cfs, respectively. Given the highly controlled hydrograph and the fact that high flows generally do not exceed 200 cfs in any given year, and also considering that the floodplain above the low-flow channel is relatively wide and flat, these moderate flows are likely still relevant with respect to their localized influence upon sediment transport and channel stability – i.e., large flows spread out rapidly across the floodplain and/or activate secondary channels, and thus the increase in hydraulic and shear forces within the main channel may be relatively small.

For each plot, ESA ran the hydraulic model for two channel configurations (existing and project condition) and two steady flow conditions: 40 and 80 cfs for Plot 4, and 40 and 100 cfs for Plot 5.

The modeled project condition was Scenario 3 – *Clear vegetation by hand to minimum of 10 feet width along entire 6.3-mile project area; remove vegetation and large wood at occlusions with no excavation of channel ground surface. Excavate through marsh region in Plot 4 where channel is discontinuous to create a single thread channel allowing for recreational passage.*

Results

As a result of both natural and anthropogenic processes, the project reach is a stable, low-gradient stream system with a relative low sediment supply and transport potential. Anthropogenic impacts such as upstream reservoirs and the aqueduct have resulted in reduced inputs of flow and sediment to the project reach, and subsequently have reduced the potential for lateral migration, sediment deposition, and other processes that characterize more dynamic systems.

The hydraulic results (specific stream power and shear stress) are consistent with a very low energy fluvial system, particularly with respect to the average values for specific stream power. At the reach scale, the capability of the channel to convey sediment (including particulate organic material) is likely to remain unchanged or increase slightly as a result of project implementation. Thus, the rate at which the channel accumulates sediment is unlikely to change notably as a result of project implementation. Further, while recognizing the inherent uncertainty of sediment transport processes in vegetated channels, the predicted increase in shear stress would not be expected to shift the system to an unstable (i.e., eroding) state. The susceptibility of the channel to the proposed perturbations is likely low. This does not take into account the potential influence of extreme flood events, debris flows, or other such powerful yet rare processes that would impact the project area regardless of project implementation.

3.7.4 Project Impacts

Water Quality Standards and Waste Discharge Requirements; Release of Sediments

Threshold HYD-1: The project would result in a significant impact if the project would violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
Threshold HYD-5: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact Statement HYD-1: *The proposed project could result in a significant impact to water quality, violate water quality standards, or conflict with existing water quality control and other plans during project construction or operation/maintenance activities that release pollutants into the Lower Owens River. However, these potential impacts would be avoided or mitigated through adherence to permitting requirements or through applied mitigation that would manage in-channel work to minimize release of pollution, sediment, and organic matter into the Lower Owens River.*

Construction

Construction of landside features at the boat launch and take-out sites, including the proposed access pathways and road improvements, parking, vault toilets, trash receptacles, signage, spoils storage area, and other proposed features would involve the use of heavy equipment and ground

disturbance as described in Chapter 2, *Project Description*. Use of the proposed equipment could result in the mobilization of sediment due to ground disturbance and the release of various construction-related water quality pollutants including oils, greases, lubricants, or fuel.

Unless adequately managed, release of these pollutants into the environment could result in degradation of water quality in receiving waters. However, because the proposed project would disturb more than one acre of land area, the County would be required to obtain a Construction General Permit. Conditions applied under the Construction General Permit would include implementation of a SWPPP, including BMPs described previously in Section 3.7-2, *Regulatory Framework*. Compliance with the requirements of the Construction General Permit would also require management of stormwater on site, measures to avoid and minimize release of stormwater pollutants into the environment, monitoring and reporting requirements, and adherence to site specific requirements, to be determined by the RWQCB. Adherence to these requirements would minimize potential construction related water quality impacts for landside activities.

Project construction would also include the installation of in-channel facilities at the boat launch and take-out, and the establishment of the proposed water trail along the approximately 6.3-mile stretch of the Lower Owens River. Construction would involve in-river activities including removal of emergent vegetation from the waterway, removal of root masses, and excavation/removal of approximately 5,200 cubic yards of sediment from select areas of the river channel. Vegetation removal would be completed by use of heavy machinery, as discussed in Chapter 2, *Project Description*. An exception to this would be select locations where vegetation removal by hand would be coordinated by Inyo County staff; the total amount of hand-removed vegetation would be minimal as a percentage of overall vegetation removal. These activities could result in the accidental release of equipment-related water pollutants, including sediment, oils, fuels, hydraulic fluid, brake fluid, etc. directly into the waterway. The proposed equipment would generally be outfitted with features designed to minimize ground disturbance, and therefore minimize potential for release of sediments into the waterway, including low ground pressure tracks, rubber tracks, mats (AKA “Marsh Mats”), and other specialized features, as discussed in Chapter 2, *Project Description*.

Removing vegetation and sediment from the river would also disturb bottom sediments, and could result in a substantial temporary increase in sediment and organics concentration in the river, which could in turn cause temporary water quality degradation downstream. Release of substantial amounts of dissolved organic material from sediments, for example during bucket excavation, could contribute to a short-term low dissolved oxygen concentration downstream. As discussed previously, low dissolved oxygen levels can be caused by the release of organic matter into the water column during periods of elevated ambient temperature – i.e., during the summer months—and have the potential to drive dissolved oxygen levels below the 1.0 mg/L threshold for fish stress. If project implementation caused dissolved oxygen levels to drop below 1.0mg/L, then impacts would be considered potentially significant, and could conflict with implementation of the Basin Plan. However, implementation of the proposed project construction and maintenance activities would not occur during summer months, which reduces the likelihood of causing dissolved oxygen levels to drop below 1.0 mg/L. Release of organic matter into the waterway during in-river work is expected to have a substantially reduced effect on dissolved

oxygen when water temperatures are lower during non-summer months, due to reduced heterotrophic microbial activity during cooler water temperatures. In addition, implementation of Mitigation Measures HYD-1a and BIO-7 (see Chapter 3.3, *Biological Resources*) would require measures that minimize the release of turbidity, organic-laden sediment, and other pollutants into the waterway. Impacts to water quality would be less than significant with mitigation, and therefore avoid conflict with the Basin Plan.

The project would not pump, alter, or interfere with groundwater. As such, the proposed project would not conflict with or obstruct implementation of a water quality control plan (i.e., Basin Plan). In addition, the proposed project would not conflict with a sustainable groundwater management plan (i.e., GSP) because the Owens Valley Groundwater Authority (the local GSA) has not yet prepared the GSP, which is not due to the DWR until 2022. Given that the proposed project would not pump, alter, or interfere with groundwater, the proposed project would not conflict with or obstruct implementation of the GSP.

Operation and Maintenance

Project operation would involve recreational use of the proposed facilities, along with periodic maintenance of the water trail. Recreational use of the proposed facilities would involve increased vehicular traffic at the boat launch and take-out facilities as well as use of the river channel by paddlers of non-motorized watercraft. Vehicles at the launch and take-out may release oil, brake dust, or spilled fuels that would be considered water quality pollutants if introduced into the river system as a result of stormwater runoff. However, accumulated water quality pollution from these sources is expected to be limited. Most automotive-related pollutants are released in very small volumes. Additionally, most automotive-related pollutants—particularly motor oil—is hydrophobic and tends to adsorb to sediments near to its release point. Road areas covered in gravel would reduce erosion potential, thereby minimizing the potential for transfer of such sediment into the waterway. Additionally, the use of gravel rather than paved roads—functionally similar to porous pavement from a water quality perspective—would help to ensure that runoff volumes from the site would be minimized since more of rainfall would infiltrate down into the underlying soil instead of flowing as runoff and pollutant contact with and sorption to underlying sediments would minimize transport of those pollutants into the waterway. Therefore, increases in vehicular traffic are not expected to significantly degrade water quality.

Project operation also includes recreational use and maintenance of the restroom facilities including the vault toilets. As explained in Chapter 2, *Project Description*, the specifications for the vault toilets would require a design that is flood-proof and can be used in fully-saturated soils. The toilets would be regularly maintained by the County and pumped out so the volume of waste in the toilets at any time would be relatively small. The vault toilets would be sited in an area above the 200-cfs inundation zone; as such there would be no potential for the toilet to affect water quality in the Lower Owens River since it would be fully contained and above the water level associated with regulated high flows. Therefore, impacts to water quality would be less than significant.

Because the proposed watercraft would be non-motorized, they would not release fuels or other motor-related pollutants into the waterway. However, use of the proposed facilities by boaters

and other recreationists could generate an increase in trash. Unless adequately disposed of, trash can become entrained in waterways, resulting in water quality degradation. This impact would be potentially significant. Therefore, Mitigation Measure HYD-1b would be required in order to manage trash on site and minimize the fugitive release of trash within the project area. Impacts to water quality would be less than significant with mitigation.

Water trail maintenance is described in greater detail in Chapter 2, *Project Description*. Over time, after completion of project construction, it is expected that regrowth of emergent vegetation would require maintenance activities in the channel to keep it open for non-motorized watercraft. Periodic maintenance would consist of vegetation removal to ensure adequate channel width and depth to allow for the passage of watercraft. Maintenance activities are discussed in Chapter 2, *Project Description* and could result in temporary in-channel water quality degradation associated with increased turbidity, organic matter, and sediment loading, similar to impacts described above due to initial project construction activities. This impact would be considered potentially significant, and could result in a conflict with Basin Plan guidelines. Therefore, Mitigation Measure HYD-1a and Mitigation Measure BIO-7 (see Chapter 3.3 *Biological Resources*) would be required, and would minimize these impacts to a less than significant level by ensuring that ongoing maintenance activities avoid fluid leaks, utilize biodegradable hydraulic fluids and lubricants, complete all in-channel activities during low-flow periods, and otherwise contain sediment generated by in-channel maintenance, thereby avoiding conflict with the Basin Plan.

Finally, as discussed in Section 3.7.1. *Environmental Setting*, the current presence of occlusions and flow-restricting vegetation reduces flow velocity, which has resulted in the buildup of sediment, organic materials, and vegetation. During summer months when water temperatures rise and the microbial community is highly active, in-channel decomposition of these suspended sediments and organic matter results in the rapid consumption of oxygen in stream, resulting in a decline in dissolved oxygen concentration. Concentrations of dissolved oxygen below 1.0 mg/L can result in fish kills. Such events have occurred many times over the past century and have occurred recently in 2013, 2017, and 2018. The removal of occlusions and flow-restricting vegetation would slightly increase flow velocity and reduce the conditions that create low dissolved oxygen conditions during the warm summer months. Reducing the seasonal low dissolved oxygen conditions would reduce the potential for fish kills due to dissolved oxygen levels falling to below 1.0 mg/L, which would be a beneficial impact.

Alteration of Existing Drainage Patterns Causing Flooding, Erosion, or Siltation

Threshold HYD-3i: The project would result in a significant impact if the project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surface, in a manner which would result in substantial erosion or siltation on- or offsite.

Threshold HYD-3ii: The project would result in a significant impact if the project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surface, in a manner which

would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Threshold HYD-3iii: The project would result in a significant impact if the project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surface, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would impede or redirect flood flow.

Impact Statement HYD-2: *Construction and operation of the proposed project could result in increased erosion and siltation through removal of in-channel vegetation and occlusions; stockpiling of spoils; and new impervious surfaces. These potential impacts would be reduced to less than significant levels through incorporation of mitigation that would deploy best management practices to manage sediment releases from spoils. Hydraulic analysis indicates that the project would not substantially alter the overall flowpath of the river, would not result in shifting the river system to an unstable (i.e., eroding) state and would reduce the likelihood of overbank topping that causes flooding.*

Construction – Water Trail Channel

Construction of the proposed project would involve two activities that could, on a localized basis, alter drainage patterns within the project area and affect erosion, sedimentation, or flooding. First, removal of existing occlusions along the proposed water trail would include the direct removal of existing vegetation mats, as well as accumulated sediment in select areas, totaling approximately 5,200 cubic yards. Existing dead-fall trees, collectively known as large wood debris (LWD), would also be moved to alternate locations within the channel of the Lower Owens River. Second, spoils removed from the Lower Owens River channel have the potential to generate increased sediment movement along the waterway, depending on their placement. These activities are discussed separately below.

Vegetation and Occlusions

The impacts associated with removal of in-channel vegetation and occlusions were evaluated in the hydraulic analysis and the geomorphic assessment completed in support of the project and included in this Draft EIR as Appendix B-1 (ESA, 2019a) and as Appendix C (ESA, 2019b), respectively. The analysis adapted prior hydraulic modeling commissioned by LADWP for the LORP as a basis for a new modeled evaluation of the project area under existing versus project conditions, for base flow conditions (approximately 49 cfs) and for habitat flow conditions (approximately 75 cfs). Results indicated limited changes in overall system hydraulics under the proposed project as relevant to flooding or major drainage patterns. Several minor changes associated with the proposed project were identified. These include:

- A modeled reduction in water surface elevations under all flow conditions due to reduced ponding and removal of backwater areas caused by existing occlusions under the baseline scenario (note that as previously discussed, the hydraulic model does not account for groundwater currently discharged to the river (i.e., the river is a gaining stream), and the decrease in surface water elevations may be less than modeled);

- Reduced wetted width of the channel: some areas with extensive existing vegetation mats could experience a reduction in wetted width of more than 80%;
- Slightly increased channel velocity and water conveyance; and
- Increased shear stress.

Increases in channel velocity would vary from location to location along the river channel. Increases would be most substantial in areas where existing occlusions prevent the open flow of water. In such areas, hydraulic simulations indicated that average water flow velocity could increase from 0.3 feet per second (ft/s) to as much as 0.8 ft/s under the project. These increases in water velocity would result in a concurrent increase in shear stress. In the most prominent locations, shear stress could increase from a baseline value of 0.01 pounds per square foot (lb/sf) to 0.05 lb/sf. Based on the assessment of potential channel evolution completed for the project (see *Geomorphic Assessment* in Appendix C of this EIR), this increase in shear stress would slightly increase the capacity of the channel to transport sediment. It would also create a slightly higher degree of sediment transport continuity along the river channel, by reducing slack water areas. These changes, however, would not be expected to cause excessive erosion or siltation downstream.

Vegetation outside of the proposed navigable water trail would remain intact. LWD would be moved out of the channel but would remain within the overall floodplain area. Therefore, outside the boundary of the navigable water trail channel, the proposed project would not otherwise alter the drainage pattern of the floodplain area. As such, there would be no substantial increase in erosion or siltation. Impacts to erosion and siltation related to the removal of vegetation and occlusions, and the moving of LWD, are considered less than significant.

With respect to flooding, the findings of the hydraulic analysis reflect that the project would convert the existing, occluded areas of the waterway into open channels, allowing increased flow and conveyance. These changes would generally improve the passage of flows during storm events, although flood flows along the waterway are expected to be limited due to intensive upstream management associated with the LORP. The comparatively minor changes in velocity and conveyance would help to convey rather than impede high flows during storm events or seasonal releases per the LORP operations. Therefore, the project would not significantly impact or alter flood flows along the Lower Owens River.

Spoils Placement

As stated above, spoils removed from the Lower Owens River channel have the potential to generate increased sediment movement along the waterway, depending on their placement. For example, if spoils were placed in an area that would be inundated during storm events or LORP seasonal habitat flows, or that would interfere with localized drainage, the piles could erode and affect water quality downstream, which would be a potentially significant impact. Spoils placement areas, however, have been identified so as to be located on the floodplain of the Lower Owens River, in areas which are not inundated during seasonal high flow releases (see Figure 2-3). Spoils would be placed in wind-rows (i.e., small berms) or in landforms shaped to blend in to existing terrain (i.e., “contoured”). Spoils would be placed in such a manner to minimize interference with existing drainage patterns and minimize erosional impacts – that is, outside of

existing minor channels and away from the main channel of the Lower Owens River and, additionally, outside of the seasonal high flow inundation area. Existing vegetation will act as a natural filter strip and will act to further limit overland sediment movement during major storm events. Nonetheless, implementation of Mitigation Measure HYD-2 would be required in order to ensure that potential impacts associated with erosion and siltation are minimized. The BMPs listed below in Mitigation Measure HYD-2 would also satisfy the requirements of the state Construction General Permit SWPPP. This measure would minimize erosion-related impacts by implementing specific best management practices to minimize erosion of spoils. With the implementation of the mitigation measure, impacts related to erosion and siltation would be less than significant.

Construction – Boat Launch and Take Out

Impervious surfaces prevent the infiltration of rainfall to the subsurface, and as a result can cause increases in stormwater runoff. The proposed project would install limited amounts of new impervious surfaces at the launch and take-out sites. The proposed access roads, pathways and parking areas would be surfaced with pervious materials, such as compacted gravel or another all-weather surface. The only impervious surface would be the footprint for the proposed vault toilets. As such, development of the launch and take-out facilities would not result in substantial changes to the site drainage or infiltration patterns. Substantial changes to stormwater drainage patterns would not occur. Impacts associated flooding, erosion, and siltation would be less than significant.

Operation and Maintenance

Project operation would involve recreational use of the proposed facilities, along with periodic maintenance of the water trail. Ongoing removal of emergent vegetation from the river channel during channel maintenance would ensure that the channel that was cleared during construction would remain clear of vegetation during project operation. These activities would reinforce preferential flow paths and help to maintain flow within the channel by removing vegetation and other potential occlusions. These changes would not restrict the overall flow capacity, or further alter flow velocity or shear stress, beyond those changes identified for project construction. Project maintenance would simply ensure that changes deployed during project construction would remain in effect for the duration of the project. As indicated in the previously discussed geomorphic assessment, the proposed project would likely not result in a shift of the river system to an unstable (i.e., eroding) state because the median shear stress would still be less than the critical shear stress for fine gravel. Therefore, operation of the project would result in less than significant impacts with regard to drainage patterns, erosion, siltation, and flooding.

3.7.5 Cumulative Impacts

The geographic context for the analysis of cumulative impacts to hydrology and water quality is the Lower Owens River watershed. As listed in Table 3-2, approximately 11 related projects are proposed for development or implementation in the area. The related projects in the vicinity range from quarries, roadway and runway expansion and repairs, new utility transmission lines, dust control programs, remediation, to water-based projects. Similar to the proposed project, these projects would be required to comply with applicable water quality related permitting

requirements during construction, including adherence to the requirements of the statewide Construction General Permit and its required preparation and implementation of a SWPPP. Adherence to the conditions of the applicable permit would ensure that construction period pollutants associated with stormwater runoff would not contribute to a cumulatively considerable impact on water quality, because the requirements of the Construction General Permit are designed to ensure protection of beneficial uses along downstream waterways.

Project-related water quality direct impacts associated with in-channel construction and maintenance would be minimized through implementation of Mitigation Measures HYD-1a and BIO-7, as discussed previously. It is expected that some small amount of sediment could escape into the downstream waterway. These releases, however, are expected to be limited in time and in extent, and would only occur during the construction process and during intermittent periodic maintenance. Cumulative scenario activities associated with other projects could also release very limited/residual amounts of sediment or other water quality pollutants into the waterway. However, these are generally not expected to co-occur with the project. Additionally, the Lower Owens River is not included on California's 303(d) water quality list for oil and grease, sediment, or turbidity. Therefore, the project would not contribute to a cumulatively considerable impact on water quality or sediment associated with the proposed construction or maintenance activities. Cumulative impacts related to hydrology and water quality would be less than significant.

3.7.6 Mitigation Measures

The project would result in potentially significant impacts with regard to drainage patterns, erosion, and sedimentation. Therefore, the following mitigation measures, in addition to Mitigation Measure BIO-7 contained in Section 3.3, would be required.

> **Mitigation Measure HYD-1a:** ***In-Stream Measures to Minimize Pollution, Sediment Loading, and Dissolved Oxygen Impacts.*** In order to minimize turbidity and sediment loading during project construction and maintenance, the County shall ensure that all in-channel work includes deployment of measures to avoid and/or minimize release of pollutants, sediment, and turbidity into the waterway. Typical measures to be deployed may include the following measures, or measures that are functionally equivalent to the following:
>
> - In-channel construction and vegetation removal shall occur during October through May, or otherwise during months when average water temperatures are not elevated, to ensure project activities do not result in dissolved oxygen levels that violate Basin Plan objectives.
> - All equipment used in-channel and adjacent to the waterway shall be adequately maintained to avoid leaks and cleaned offsite prior to use in the project area, to avoid release of equipment-related pollutants;
> - Equipment used within standing or flowing water shall have biodegradable hydraulic fluids and lubricants;
> - Complete all in-channel construction and maintenance activities during low-flow periods (i.e., avoid work during storm flow or periods when in-channel flows exceed 70 cfs);

- Remove the occlusion at River Mile 45.1 to 45.3 incrementally to allow the ponded water to drain slowly. In conjunction with Mitigation Measure BIO-7, monitoring shall be conducted downstream during removal to assess the effects on water quality; and
- Use hand-removal methods to remove emergent vegetation from the channel whenever practicable to minimize sediment release and suspension.

Mitigation Measure HYD-1b: ***Trash Receptacles.*** The County shall ensure that adequate trash receptacles are installed at the boat launch and take-out areas, and that these receptacles are maintained (including trash removal) on an ongoing basis.

Mitigation Measure HYD-2: Floodplain Erosion Management. In order to stabilize spoils placed in stockpile areas, the County shall require the contractor to implement best management practices that minimize erosion of spoils, including but not limited to the following:

- Place and lightly compact spoils in such a manner as to reduce erosion,
- Revegetate by broadcast seeding with native vegetation including, but not limited to, salt grass or native bunch grasses
- Encircle spoils placement areas with 100% biodegradable straw wattles.
- Stake spoils placement areas using 100% biodegradable wooden stakes.

3.7.7 Level of Significance After Mitigation

With the implementation of the recommended mitigation measures, impacts related to hydrology and water quality and drainage would be less than significant.

3.8 Land Use and Planning

This section provides an assessment of project effects related to land use and planning, and addresses whether the proposed project would conflict with applicable land use plans, policies, or regulations and applicable habitat conservation plans or natural community conservation plans. The analysis includes an evaluation of the project's potential to conflict with the County of Inyo's (County) General Plan, Zoning Code, and draft Lower Owens River Recreation Plan and the Lower Owens River Project (LORP).

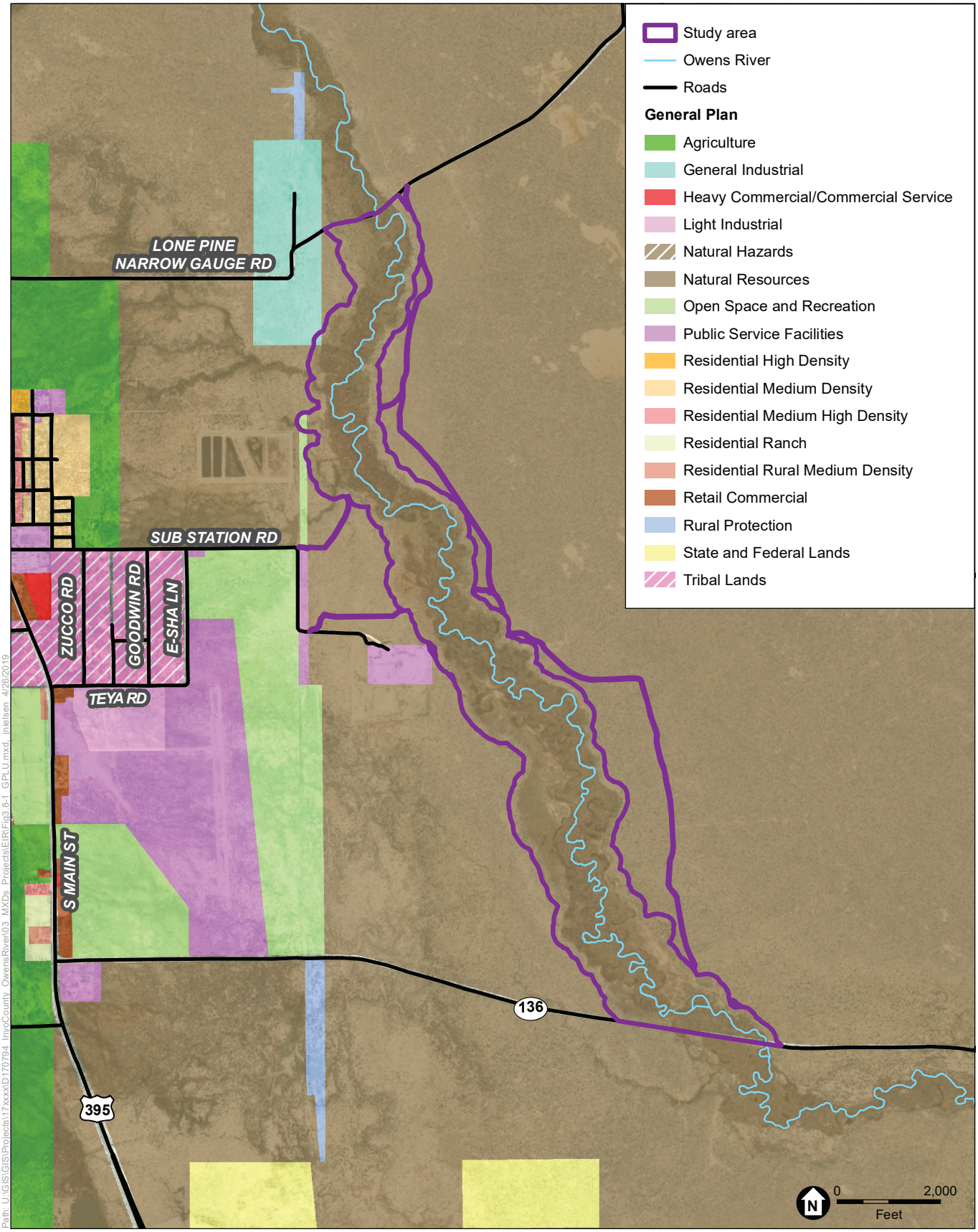
This analysis complies with Subdivision 15125(d) of the CEQA Guidelines, which directs that all EIRs provide a discussion of a project's potential to conflict with applicable plans, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects, including general plans and regional plans. Potential conflicts with policies related to specific environmental issues (e.g., water quality, cultural resources) are addressed in the environmental topic areas included in other sections of this EIR.

3.8.1 Environmental Setting

Existing Land Use

The project is located along an approximately 6.3-mile stretch of the Owens River, in Inyo County, California. Inyo County is the second largest county in California, comprised of approximately 10,140 square miles or roughly 6.5 million acres (County of Inyo, 2001). The project area is located in the lower Owens Valley of Inyo County, which is sparsely populated concentrated around several small unincorporated communities. The closest unincorporated town to the project area is Lone Pine, which is located along Highway 395 in the southern portion of the County and has a total population of 1,655 residents (Digital Desert, 2018). Lone Pine consists of primarily residential land uses with a limited mix of commercial, including hotel uses. Similar to other unincorporated communities in the county, open space is the primary land use outside of Lone Pine, and consists of agriculture, generally cattle grazing; outdoor recreation; and resource conservation (County of Inyo, 2013).

The project area is located approximately 1.5 miles east of Lone Pine and is defined by the perimeter of the Lower Owens River floodplain from Lone Pine Narrow Gauge Road south to Highway 136 (refer to Figure 2-2). The project area is largely a natural setting and is owned by the Los Angeles Department of Water and Power (LADWP). As shown in **Figure 3.8-1**, ***Existing Land Use Designations,*** the project area is designated Natural Resources (NR) in the County's adopted General Plan and Draft General Plan Update. According to the County Draft General Plan Update, the NR land use designation applies to land or water areas that are essentially unimproved and designated to remain open in character, provides for the preservation of natural resources, the managed production of resources, and recreational uses (County of Inyo, 2013). The NR land use designation allows the County to permit the siting of public facilities and utility system components in this land use (County of Inyo, 2013).



SOURCE: ESRI, 2016; Inyo County.

Owens River Water Trail

Figure 3.8-1
Existing Land Use Designation

ESA

Surrounding land uses to the north, east, and south of the project area also include NR and open space and recreation land use designations, which are primarily used for cattle grazing and recreational uses. Adjacent to the northern and western portion of the project area are general and light industrial land use designations. The Lone Pine Airport is located within the unincorporated town's boundaries. In addition, the Paiute-Shoshone Tribe Lone Pine Reservation is located adjacent to the north of the Lone Pine Airport and is designated as Tribal Lands.

Existing Zoning

As shown in **Figure 3.8-2**, ***Existing Zoning Designations*****,** the project area is zoned Open Space – 40 acre minimum (OS-40) in the County's Zoning Code (County of Inyo, 2018b). The OS-40 zoning designation allows for the following uses: single-family dwelling, including the use of a mobile-home; farms and ranches for orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other enterprises carried on in the general field of agriculture; livestock ranches for raising, grazing, breeding, boarding or small animals; animal hospitals or kennels, except when the property is adjacent or abuts residential zoned property; wildlife refuges; hunting and fishing preserves; and wilderness areas and wilderness uses (County of Inyo, 2018b). Surrounding zoning designations include general industrial and public uses in to the north and west of the project area. Zoning classifications within the unincorporated town of Lone Pine include residential, commercial, industrial, public, and open space (County of Inyo, 2018a).

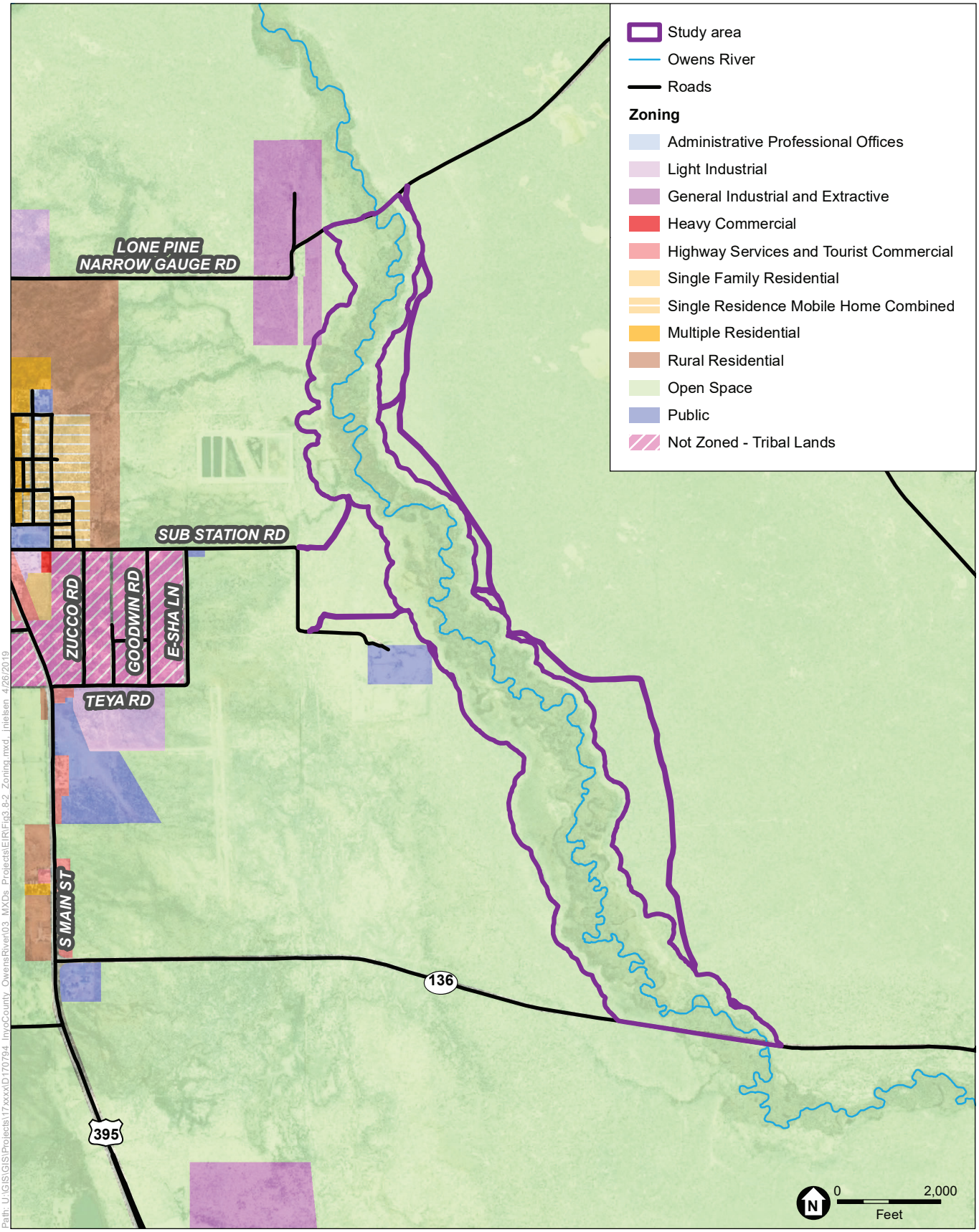
Existing Land Ownership

While the County includes a large quantity of land, the majority of land is under various agencies' jurisdictions, where private landownership constitutes only 1.9 percent and the remaining 98.1 percent is managed by a range of federal agencies, the State of California, LADWP, the County and other local agencies, and Indian Reservations (County of Inyo, 2001). Specifically, federal agencies, including the Bureau of Land Management (BLM), Inyo National Forest, and Death Valley National Park have jurisdiction over approximately 91 percent, of the land; the State of California manages about 3.5 percent; LADWP owns 2.7 percent; and, the County, Tribal Entities, and other local agencies own or manage the remaining 0.3 percent. In the Owens Valley, LADWP landownership constitutes a large portion of the valley floor, where the proposed project would be located within land owned by LADWP.

3.8.2 Regulatory Framework

Federal

The project site is not located within or adjacent to any Federal lands. There are no applicable Federal regulations.



SOURCE: ESRI, 2016; Inyo County.

Owens River Water Trail

Figure 3.8-2
Existing Zoning Designation

ESA

Regional

Inyo County General Plan

State planning law mandates that every city and county prepare a General Plan, which is a comprehensive policy document outlining the future development within a jurisdiction. The County adopted its General Plan in 2001 and is currently in the process of updating the General Plan. The Draft General Plan Update was released in 2013. The County's General Plan is divided into seven elements, including, Government, Land Use Element, Economic Development, Housing, Circulation, Conservation/Open Space, and Public Safety. The following goals, objectives, polices and implementation measures for land use policies from the adopted General Plan and the 2013 Draft General Plan Update are applicable to the project.

Land Use Element

Policy LU-1.16 Inyo – LADWP Enhancement and Mitigation Projects. All General Plan land use designations shall allow for the implementation of Enhancement/Mitigation Projects and/or mitigation measures as described in the Inyo County-Los Angeles Long Term Ground Water Management Agreement and/or the 1991 Final Environmental Impact Report that addressed that agreement.[1]

Policy LU-5.4 Natural Resources Designation. This designation, which is applied to land or water areas that are essentially unimproved and planned to remain open in character, provides for the preservation of natural resources, the managed production of resources, and recreational uses.

Government Element

Goal Gov-2.1: To ensure planning decisions are done in a collaborative environment and to provide opportunities of early and consistent input by the County and its citizens into the planning process of other agencies, districts and utilities.

Policy Gov-2.1 Continue Participation on Collaboration Planning Effort. The County shall continue its participation in collaborative planning efforts and work to expand participation to all affected government agencies.

Policy Gov-2.2 Public Participation. The County shall work with federal and state agencies, local districts, utilities (e.g., LADWP), and Native American tribes to ensure that the County and the public are involved early in any planning process and that routine feedback and public input is requested.

Economic Element

Policy ED-1.3 Visitor Usage of LADWP Lands. Encourage the LADWP to continue to allow and expand the recreational uses of their land holdings in the Owens Valley.

Inyo County Code

The County's Code includes the Zoning Code, which contains development standards and provisions for development within the County. Title 18 of the County Code comprises the Zoning Code, which creates the zoning designations and governs allowable uses within the County. Section 18.12.040 of the County Code requires approval of a conditional use permit (CUP) for

[1] This policy has been renumbered to Policy LU-1.15 in the Draft General Plan Update but the policy language has remains the same.

various uses in the Open Space zoning district, which include but are not limited to public and quasi-public buildings and uses of a recreational nature as well as informational kiosks and off-site directional signs complying with the provisions of Chapter 18.75 and subject to the provisions of Section 18.12.050. In addition, Chapter 18.75 of the County Code establishes development standards and regulations for signage within the County.

County of Inyo/City of Los Angeles Department of Water and Power Long Term Water Agreement – Lower Owens River Project

Under the Inyo/Los Angeles Long Term Water Agreement, the County and LADWP committed to rewater the full 62-mile reach of the Owens River as part of the Lower Owens River Project (LORP). The LORP was originally identified in a 1991 agreement between the County and LADWP. The LORP was identified in a 1991 EIR as mitigation for impacts related to groundwater pumping by LADWP from 1970 to 1990. The LORP is implemented through a joint effort by LADWP and the County. The LORP is guided by five objectives, which include:

1. Establishment and maintenance of diverse riverine, riparian, and wetland habitats in a healthy ecological condition;
2. Compliance with state and federal laws (including regulations adopted pursuant to such laws) that protect Threatened and Endangered Species;
3. Management consistent with applicable water quality laws, standards, and objectives;
4. Control of deleterious species whose presence within the LORP area interferes with the achievement of the goals of the LORP; and
5. Management of livestock.

In order to achieve the first objective, the LORP includes four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area with seasonal flooding and land management to benefit wetlands and waterfowl; and (4) maintaining several off-river lakes and ponds.

In addition, the LORP includes range improvements and modified grazing practices on leases in the LORP project area. The land around the project area is under the jurisdiction of LADWP, where the majority of this land is currently used for cattle grazing.

Inyo County's Lower Owens River Recreational Use Plan

Inyo County's Lower Owens River Recreational Use Plan was undertaken to consider existing recreational opportunities and new recreational uses made possible by the reintroduction of water in the Lower Owens River and the development of wetlands. The considered options to enhance existing uses and better manage potential new recreational experiences. The purpose of the Lower Owens River Recreational Use Plan is to support the LORP goals while creating opportunities for the public to experience the LORP through recreation, learn more about the ecosystem, and become active stewards of the Lower Owens River. Goals of the Lower Owens River Recreational Use Plan include: 1) Strengthen the area's nature-based tourist economy; 2) Enhance

user opportunities for low-impact exploration and wildlife observation; 3) Improve area access and wayfinding; 4) Strategically improve river and lake access for fishing, canoeing, and kayaking; and 5) Inspire cultural and environmental education, learning, and stewardship.

City of Los Angeles Department of Water and Power Owens Valley Land Management Plan

The Owens Valley Land Management Plan (OVLMP) was finalized by LADWP in April 2010 and provides management direction for resources on all lands owned by LADWP in Inyo County, excluding the LORP area. The OVLMP is an overarching resource management plan that complements the LORP for monitoring and managing resources from Pleasant Valley Reservoir to Owens Lake. Since the OVLMP does not include the LORP area, which includes the project area, this plan is not applicable to the project.

3.8.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to land use and planning in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, and based on the revised 2019 CEQA Appendix G Checklist,[2] a significant land use and planning impact would occur if the project would:

LUP-1 Physically divide an established community; or

LUP-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

As detailed in the Initial Study (refer to Appendix A of this EIR), the project would have no impact regarding **LUP-1** as the project would provide recreational opportunities along the existing Owens River**.** For a brief discussion on why this issue area was not further evaluated in this section, refer to Chapter 5, Other CEQA Considerations, of this EIR. The topic regarding habitat conservation plans that was previously in the Land Use and Planning section of the checklist was deleted. See Section 3.3, Biological Resources, for an analysis regarding potential project impacts relative to habitat conservation plan or natural community conservation plan.

Methodology

The analysis of the proposed project's potential to result in significant impacts related to land use and planning is based on a qualitative evaluation of the project's consistency with applicable land use plans, programs, and agreements, including the County's General Plan and County Code, the County and LADWP's LORP, and the County's Lower Owens River Recreational Use Plan.

[2] CEQA revisions, including revisions to Appendix G Checklist, were approved on December 28, 2018. The Initial Study was prepared in May 2018 and is based on the Appendix G Checklist in effect at that time.

3.8.4 Project Impacts

Conflict with Land Use Plans and Policies

Threshold LUP-2: The project would result in a significant impact if the project would conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Impact Statement LUP-1: *The project would be consistent with the County's General Plan and County Code, the County and LADWP's LORP, and the County's Lower Owens River Recreational Use Plan. Therefore, the project would not conflict with an applicable land use plan and impacts would be less than significant.*

The following analysis addresses CEQA Guidelines Section 15125(d), as it pertains to land use and provides a discussion regarding the project's consistency with applicable General Plan and regional plans. Policies related to specific environmental issues are addressed in other sections of this EIR within the particular topical section (e.g., Section 3.1, Aesthetics; Section 3.2, Air Quality; Section 3.3, Biological Resources).

As discussed above in the Regulatory Framework, applicable land use plans, policies, and regulations include the County's General Plan and County Code, the County and LADWP's LORP, and the County's Lower Owens River Recreational Use Plan. The evaluation of consistency with plans, programs, and agreements is intended to provide perspective on whether the proposed project fits into the framework of the goals and policies that the County, in coordination with other agencies, including LADWP, has adopted to guide the restoration of the Lower Owens River along with establishing new recreational opportunities. The following discussions summarize the relevant sections of the County's General Plan and County Code, the County and LADWP's LORP, and the County's Lower Owens River Recreational Use Plan and evaluate the proposed project's consistency with these guiding policies.

County of Inyo General Plan

As described above in Section 3.8.2, the Land Use Element policies that are applicable to the proposed project are Policy LU-1.16 Inyo – LADWP Enhancement and Mitigation Projects and Policy LU-5.4 Natural Resources Designation. Policy LU-1.16 of the Land Use Element states that all General Plan land use designations shall allow for the implementation of Enhancement/Mitigation Projects and/or mitigation measures as described in the Inyo County-Los Angeles Long Term Ground Water Management Agreement and/or the 1991 Final Environmental Impact Report that addressed that agreement. The project has been designed to help achieve the restoration and recreational goals established in the Inyo County-Los Angeles Long Term Ground Water Management Agreement and the subsequent LORP, which include but are not limited to the creation and enhancement of natural habitats to be consistent with the needs of certain habitat indicator species through the application of appropriate flow and land management practices. While the project is primarily a recreational project, the project would also provide instream and riparian habitat benefits and improve water quality. Since the project would further the goals of the Inyo County-Los Angeles Long Term Ground Water Management

Agreement and the LORP, the project would be consistent with Policy LU-1.16 of the Land Use Element of the County's General Plan.

Policy LU-5.4 of the Land Use Element states that the Natural Resources land use designation applies to land or water areas that are essentially unimproved and planned to remain open in character, provides for the preservation of natural resources, the managed production of resources, and recreational uses. The project would develop a new recreational water trail with a boat-launch and boat take-out facility along an approximately 6.3-mile stretch of the Lower Owens River, which is currently undeveloped open space. The boat-launch and boat take-out facilities would consist of a gravel staging area along with a prefabricated vault restroom, wildlife resistant trash receptacles, a tube-type fee station, and weather resistant signage, all of which would be located on a relatively small footprint and low-lying to avoid contrasting with the surrounding open space areas. Development of the water trail would retain the existing open space character of the Lower Owens River as the purpose of the project is to establish a new recreational facility that allows users to paddle through the natural setting of the Owens Valley. Furthermore, implementation of the project would preserve the existing river resources as this stretch of river would be maintained and fenced off from surrounding cattle grazing operations. Therefore, since the project would establish a new recreational water trail with associated facilities and would not result in a substantial change to the existing landscape of the surrounding open space area, the proposed project would be consistent with Policy LU-5.4 of the Land Use Element of the County's General Plan.

Goal Gov-2.1 along with Policies Gov-2.1 and Gov-2.2 of the Government Element require that the County engages in collaborative planning practices with its citizens, other agencies, and Tribes to ensure all parties are involved early in the process and are given opportunities to provide input. Through the environmental review process mandated under the California Environmental Quality Act (CEQA), the County has engaged with the public as well as interested agencies at to obtain input into the project and the CEQA document in the beginning of the environmental review process. These outreach efforts include the tribal consultation process implemented under Assembly Bill 52, release of the Notice of Preparation (NOP) and conducting a Scoping Meeting that was held during the 30-day circulation of the NOP. In addition, the public and agencies will have an opportunity to comment on this EIR during the 45-day public comment period. Since the project would be on land leased from LADWP, the County has and would continue to coordinate with LADWP regarding the project. Therefore, the project would be consistent with Goal Gov-2.1 and Policies Gov-2.1 and Gov-2.2 of the Government Element of the County's General Plan.

Policy ED-1.3 of the Economic Element directs the County to encourage LADWP to continue to allow and expand the recreational uses of their land holdings in the Owens Valley. Implementation of the project would be consistent with Policy ED-1.3 as the project would be developed on the surrounding floodplain area around the approximately 6.3-mile stretch of the Lower Owens River which would be leased from LADWP in order to develop a new recreational opportunity that would be accessible to users of all abilities, including the disabled. In partnership with LADWP, development of the project would add another tourist attraction to the Owens Valley as well as establish a first-of-its-kind designated water trail in the western United States,

which could increase visitors to the area. Thus, the project would be consistent with Policy ED-1.3 of the Economic Element of the County's General Plan.

Overall, the proposed project would not conflict with the County's goals and policies for the Lower Owens River and surrounding area and as such, would not result in significant environmental impacts. Impacts caused by land use conflicts with the County's General Plan would be less than significant.

Inyo County Code

As stated above, the County's Code includes the Zoning Code, which contains development standards and provisions for development within the County. As indicated above, the project area is zoned as OS-40 (County of Inyo, 2018b). With the approval of a CUP, the project would be consistent with the OS-40 zoning designation as the project would develop a new recreational water trail with associated facilities, which would allow users to actively enjoy the existing river open space area. However, the project could conflict with the existing cattle grazing that occurs in the area. In order to provide separation, the project would install cattle guards and fences at the junction of Lone Pine Narrow Gauge Road and the Bluff Road, around the boat-launch and boat take-out facilities as well as along the river channel, as necessary, to separate the surrounding cattle grazing lands from the future users of the ORWT. The installation of the cattle guards and fencing would allow the existing cattle grazing operations to continue concurrently with the operation of the project, where neither would be impacted by the other. Therefore, with the approval of a CUP for the launch and take-out facilities and informational signage, implementation of the project would be consistent with the existing zoning designation and would not conflict with surrounding land uses.

In addition, the County Code establishes development standards and regulations for signage within the County. All signage installed as part of the project would be required to comply with the County Code, specifically regarding standards related to location, height, design, and materials. The ORWT would be used during the day and signage would not be illuminated. Approval of the CUP and compliance with the County Code would ensure that the project is not in conflict with this applicable land use regulation.

Overall, the project would be consistent with the County Code and would not conflict with any of its applicable regulations. Environmental impacts caused by conflicts with the County Code would be less than significant.

County of Inyo/City of Los Angeles Department of Water and Power Long Term Water Agreement – Lower Owens River Project

The project would be consistent with the restoration goals of the LORP the project would provide instream and riparian habitat benefits and improve water quality. Specifically, by removing existing occlusions in the river channel, the proposed project could improve water flow, increase dissolved oxygen, and improve water quality, since excessive tule biomass can have a deleterious effect on dissolved oxygen, and a negative effect on water quality (e.g., caused by tule abundance and decomposition) (ESA, 2019). Please see Section 3.7, Hydrology and Water Quality, for a detailed analysis of the effects of the project on water quality. In addition, the removal of the

occlusions would also benefit common fish species and warm-water fisheries (ESA, 2019). While construction and maintenance activities associated with the project would result in temporary water quality impacts, implementation of mitigation measures HYD-1a, HYD-1b and HYD-2 would ensure that all impacts would be mitigated to a less than significant level.

In addition, water quality during operation would be improved through the removal of occlusions that currently block various segments of the river, which would help improve water flow and allow for better movement along the river for aquatic species. Furthermore, two objectives of the proposed project are to remain consistent with the habitat, environmental, and social goals of the LORP and to implement restoration activities for the natural habitats and species of the Owens River to be consistent with the restoration efforts of the LORP. With these objectives, all restoration activities implemented under the project would be conducted in accordance with the goals and requirements established in the LORP. Therefore, the project would be consistent with the Long Term Agreement and the LORP. Environmental impacts caused by land use conflicts with the Long Term Agreement and the LORP would be less than significant.

County of Inyo Lower Owens River Draft Recreational Use Plan

Development of the project would achieve all of the applicable goals of the County's Lower Owens River Draft Recreational Use Plan as the project would establish a first-of-its-kind designated water trail in the western United States and would benefit recreational opportunities in the Owens Valley region by offering a gentle stretch of river with controlled flows that is ideal for safe paddling. Specifically, implementation of the ORWT would add another nature-based tourist attraction in the County as visitors would be able to experience a water-based recreational opportunity in addition to the various mountain-based recreational options. Construction of the boat-launch and boat take-out would result in new recreational facilities along the river, where the footprint of the facilities would be relatively small and would not substantially change the natural setting of the river or surrounding area. Installation of the ORWT would allow both residents and visitors access to a low-impact recreational activity along the Lower Owens River, where all watercraft would be non-motorized to allow for a passive opportunity to enjoy the surrounding scenic vistas as well as the river environment. In addition, the project would be specifically designed to accommodate users of all abilities, including the disabled, where provisions such as transfer steps, transfer boards, grab bars and/or surface textures would be installed at the boat-launch and boat take-out facilities. These provisions would ensure that all users would be able to access the water trail and use this outdoor recreational facility, which would be a recreational benefit within the County.

In addition, as part of the project, weather resistance signage protected by a kiosk would be included at the boat launch and take-out facilities, which would convey water safety information, rules, emergency contacts and interpretative information. The County would coordinate with Tribes, LADWP, and local ranchers regarding the information to be included on the signs. Navigational signage could be provided along the water trail itself, which could include, but not be limited to, topics such as the region's ranching history, history and information on the local Native American tribes, and surrounding scenic views. While the inclusion and location of signage along the water trail is unknown at this time, in order to analyze maximum potential impacts, it is assumed that at least one to two signs per mile of water trail would be installed. With inclusion of educational signage, recreational users would be able to gain insight into local information about the history and culture of the area. Therefore, implementation of the proposed project would be consistent with the goals of the County's Lower Owens River Recreational Use Plan. Impacts would be less than significant.

In summary, as evaluated above, the project would not result in significant environmental impacts due to a conflict with any of the applicable land use plans, policies, or regulations and impacts would be less than significant.

3.8.5 Cumulative Impacts

The geographic context for the analysis of cumulative impacts to land use and planning is the unincorporated town of Lone Pine and the surrounding area in the southern portion of the Owens Valley in Inyo County. As listed in Table 3-2, there are approximately 11 related projects proposed for development or implementation in the vicinity of the project area. As shown in Table 3-2, related projects in the vicinity consist of a variety of projects, ranging from quarries, roadway and runway expansion and repairs, new utility transmission lines, dust control programs, remediation, and water-based projects that address waterway maintenance activities. Similar to the proposed project, these projects would be required to comply with the County or applicable jurisdictional agency's land use and zoning plans. Adherence to the applicable land use plans would ensure that each project is developed within areas of the Owens Valley meant for each type of project and would be consistent with long-term land use goals. In addition, the County or applicable jurisdictional agency would review each related project as part of the development review process to ensure consistency with the policies of the applicable land use plan(s) unless there is a proposed land use policy amendment to such plan with the project application. At the time that an amendment to a land use policy is submitted, the County or applicable jurisdictional agency would need to evaluate if the proposed change to the land use policy would result in environmental impacts. With safeguards that are part of the development review process in place, the related projects, in conjunction with the proposed project, would not result in foreseeable cumulative environmental impacts associated with conflicting with applicable land use plans, policies, or regulations.

3.8.6 Mitigation Measures

Implementation of the project would not conflict with any applicable land use plans, policies, or regulations. Therefore, no mitigation measures are required.

3.8.7 Level of Significance After Mitigation

The project would not result in any significant environmental impacts related to a conflict with applicable land use plans, policies, or regulations. In addition, when considering the project in conjunction with other cumulative projects, development of the proposed project would not result in a cumulatively considerable impact related to land use. Therefore, impacts related to land use and planning would be less than significant and no mitigation measures are required.

3.9 Recreation and Parks

This section addresses the potential impacts to recreational and park facilities associated with implementation of the project. The section provides a description of existing recreational and park facilities, a summary of applicable regulations, and an evaluation of the project's potential impacts to park and recreation services.

3.9.1 Environmental Setting

Regional Park and Recreation Facilities

Inyo County's natural environment provides ample and diverse recreational opportunities to many tourists and residents.[1] Most of the land in the County is under public ownership, and public agencies have set aside land for campgrounds, wilderness areas, parks, and recreation areas, as shown on **Figure 3.9-1**, *Existing Recreational Facilities*.

Recreation demand is high in the Eastern Sierra, and the US Forest Service Eastern Sierra InterAgency Visitor Center, which is located at the junction of Highway 395 and State Route 136, accommodates upward of 300,000 visitors each year.[2] According to the Lower Owens River Recreation Use Plan, since the return of flowing water to Owens River in 2006, resurgence of the ecosystem has resulted in a rediscovery of the Lower Owens River area by anglers, paddle boaters, bird watchers, and other recreationalists.[3] Although not supported by existing recreation facilities, the following recreation activities take place in the area of Lower Owens River: hiking, scenic driving, biking, boating and swimming, fishing, birding and wildlife viewing, waterfowl hunting, off-highway vehicle riding, camping and picnicking, historic and cultural tourism, and volunteer stewardship and environmental education.

An approximately 45-mile stretch of Lower Owens River from Pleasant Valley Lake north of Bishop, to Tinnemaha Reservoir south of Big Pine is currently used by kayakers and canoers.[4] However, official launching and take-out facilities do not currently exist within the surrounding region, and unpredictable, frequently changing water-levels create hazards. Currently, sections of the Owens River corridor within the project area are non-navigable due to the channel being partially or fully obstructed by emergent aquatic vegetation and associated sediment accumulation as well as by large and small woody debris.

1 Inyo County General Plan Conservation and Open Space Element, Inyo County, 2001. Available: http://inyoplanning.org/general_plan/goals.htm. Accessed November 7, 2018.

2 Inyo County staff conferred with Eastern Sierra InterAgency Visitor Center Director, Matt Helt, email dated January 23, 2017.

3 Lower Owens River Recreation Use Plan, Inyo County, 2013. Available: http://www.inyowater.org/wp-content/uploads/2017/08/Lower-Owens-River_Recreation-Use-Plan-DRAFT_011513.pdf. Accessed November 20, 2018.

4 Paddling the Lower Owens River, Paddling California, 2018. Available: http://www.paddlingcalifornia.com/articleowensriver.html. Accessed November 20, 2018.

Inyo County Parkland

The Inyo County Parks and Recreation Department manages and maintains approximately 140 acres of parkland throughout the County, including in Lone Pine, Independence, and Bishop.[5] County maintained parks include Millpond Recreation Area, Izaak Walton Park, Starlite Park, Mendenhall Park, Dehy Park, Independence Park, and Spainhower Park (formerly Lone Pine Park). The City of Bishop Community Services Department maintains Bishop City Park, located in downtown Bishop. Bishop City Park spans 44 acres and includes Bishop Dog Park. The combined County and City parks total approximately 184 acres of parkland. **Table 3.9-1,** *Inyo County Parks and Recreation Facilities***,** details the park and recreation facilities operated by the County and City of Bishop. These park and recreation facilities are shown on Figure 3.9-1, *Existing Recreational Facilities*.

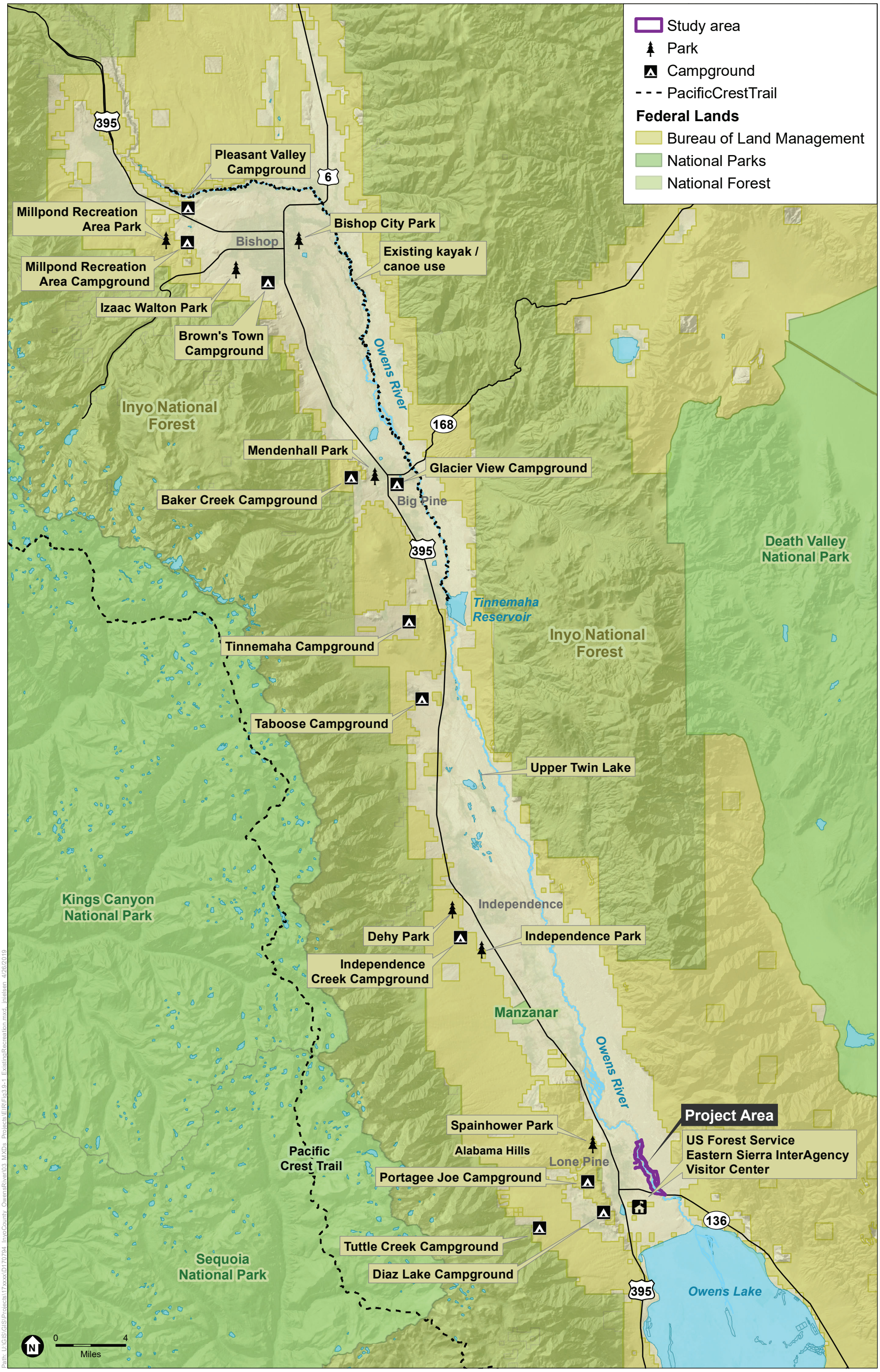
TABLE 3.9-1
INYO COUNTY PARKS AND RECREATION FACILITIES

Name*	Location	Acreage	Description/Amenities
Millpond Recreational Area - Park	220 Sawmill Road, Bishop	125.9	Play equipment, pond for swimming, softball fields, tennis courts, horseshoe pits, and a gazebo with tables and barbeques.
Izaak Walton Park	3600 West Line Street, Bishop	2.1	Play equipment, event-sized barbeque, large service area, with a creek running through the park.
Starlite Park	880 Starlite Drive, Bishop	1.0	Tennis court, picnic tables, Americans with Disabilities Act (ADA)-accessible drinking fountain, and ADA-accessible play equipment.
Mendenhall Park	370 North School Street, Big Pine	4.8	Play equipment, basketball court, picnic gazebo, and a horseshoe-pitching area.
Dehy Park	435 North Edwards Street, Independence	1.4	Play equipment, community food prep court, horseshoe-pitching area, basketball court, restrooms, and a creek running through the park.
Independence Park	609 South Edwards Street, Independence	0.5	Shaded areas and a restroom.
Spainhower Park (formerly Lone Pine Park)	445 North Main Street, Lone Pine	4.1	Play equipment, lawn area, tennis courts, basketball courts, horseshoe-pitching area, a gazebo, and a creek running through the park.
Bishop City Park*	688 North Main Street, Bishop	44.0	Play equipment, baseball fields, tennis courts, public pool, skate park, outdoor fitness center, shade structures and benches, bocce court, community garden, arboretum, pond, and a dog park.

Source: Inyo County Parks and Recreation, Inyo County Parks and Recreation, 2012. Available: http://www.inyocountycamping.com/. Accessed October 30, 2018.

*Inyo County Parks and Recreation Department operates and maintains all parks listed above, except for Bishop City Park, which is operated and maintained by the City of Bishop Community Services Department.

5 Inyo County Parks and Recreation, Inyo County Parks and Recreation, 2012. Available: http://www.inyocountycamping.com/. Accessed October 30, 2018.



SOURCE: ESRI, 2019.

Owens River Water Trail

Figure 3.9-1
Existing Recreational Facilities

ESA

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Inyo County Campgrounds

Inyo County Parks and Recreation Department manages 11 campgrounds, each of which are open year-round.[6] The following campgrounds within the vicinity of the project area, as shown on Figure 3.9-1.

Diaz Lake Campground

The Diaz Lake Campground is located approximately three miles south of Lone Pine. The campground is located along Diaz Lake and includes a boat launch and amenities for swimming, fishing, picnicking, and grilling. The campground includes play equipment, some water hook-ups, and vault restrooms.

Portagee Joe Campground

The Portagee Joe Campground is located west of Lone Pine near Alabama Hills. The campground is located near a stream and includes 20 camp spaces, tables, grills, potable water, fire rings, and vault restrooms.

Independence Creek Campground

The Independence Creek Campground is located west of Independence along Independence Creek. Amenities at this campground include tables grills, potable water, fire rings, and vault restrooms. No shower facilities are available at this campground.

Bureau of Land Management

The Bureau of Land Management (BLM) Bishop Field Office manages approximately 750,000 acres in Inyo and Mono Counties.[7] Specifically, BLM's Owens Valley Management Area encompasses 153,750 acres containing the Alabama Hills, three developed campgrounds, and areas of dispersed recreation use.[8] The following BLM recreational points of interest are located in the vicinity of the project area, as shown on Figure 3.9-1.

Alabama Hills

The Alabama Hills are a formation of rounded rocks and eroded hills set between the jagged peaks of the Sierra Nevada and the Inyo Mountains.[9] Established in 1969, this 29,920 acre BLM recreation area sits just west and above the Lower Owens River.[10] Visitors enjoy touring film

6 General Camping Information, Inyo County Parks and Recreation, 2018. Available: https://www.inyocountycamping.com/general_camping_info.html. Accessed December 10, 2018.

7 Bureau of Land Management Bishop Field Office, Department of the Interior, 2018. Available: https://www.blm.gov/office/bishop-field-office. Accessed December 5, 2018.

8 Lower Owens River Project Final EIR/EIS, Los Angeles Department of Water and Power, 2004. Available: http://www.inyowater.org/wp-content/uploads/legacy/LORP/DOCUMENTS/LORPFinalEIREIS.pdf. Accessed December 5, 2018.

9 Alabama Hills, Department of Interior, 2018. Available: https://www.blm.gov/visit/alabama-hills. Accessed December 5, 2018.

10 Lower Owens River Recreation Use Plan, Inyo County, 2013. Available: http://www.inyowater.org/wp-content/uploads/2017/08/Lower-Owens-River_Recreation-Use-Plan-DRAFT_011513.pdf. Accessed November 20, 2018.

sites, photography, rock climbing, exploring natural arches, horseback riding, mountain biking, and viewing Mount Whitney and annual wildflower blooms.

Tuttle Creek Campground

Tuttle Creek Campground is located west of the Alabama Hills, with views of Mount Whitney, Lone Pine Peak, and Mount Williamson.[11] The campground is open year-round, with ample opportunities for exploring, hiking, and sightseeing.

Diaz Lake Campground

The Diaz Lake Campground is located approximately three miles south of Lone Pine. The campground is located along Diaz Lake and includes amenities for swimming, fishing, picnicking, boating, and grilling. The campground includes play equipment, some water hook-ups, and vault toilets.

United States Forest Service

Inyo National Forest

Established in 1907, the Inyo National Forest includes over two million acres of lakes, streams, mountains, and wilderness areas.[12] Elevations range from 3,900 to 14,494 feet, providing diverse habitat and year-round recreational opportunities. In the spring and summer months, visitors can enjoy camping, fishing, mountain biking, and hiking. During winter, temperatures drop and visitors can enjoy snowfall through snowshoes, skis, snowboards, and snowmobile trails. The Inyo National Forest receives more than four million visitors each year. As previously indicated, the US Forest Service Eastern Sierra InterAgency Visitor Center is located at the junction of Highway 395 and State Route 136, and accommodates upward of 300,000 visitors each year.[13]

3.9.2 Regulatory Framework

Federal

No federal regulations related to recreation and park facilities or services are applicable to the proposed project.

State

No state regulations related to recreation and park facilities or services are applicable to the proposed project.

[11] Tuttle Creek Campground, Department of Interior, 2018. Available: https://www.blm.gov/visit/search-details/15191/1. Accessed December 5, 2018.

[12] Inyo National Forest Visitor Guide, U.S. Forest Service, 2017. Available: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd550643.pdf. Accessed December 5, 2018.

[13] Inyo County staff conferred with acting Eastern Sierra InterAgency Visitor Center Director, Matt Helt.

Local

Lower Owens River Recreation Use Plan

The Inyo County Lower Owens River Recreation Use Plan is intended to provide a conceptual framework to protect the area from the unintended consequences of increased use in the absence of a common, balanced recreation vision and management strategy.[14] The plan's purpose is to support the Lower Owens River Project (LORP) goals while creating opportunities for local residents and visitors to experience recreation, learn more about the ecosystem, and become active stewards of the Lower Owens River. The plan defines a recreation vision and community goals for providing ecologically-appropriate recreation opportunities on the Lower Owens River, presents a preferred concept for future recreation development, and addresses feasibility of plan implementation at a high level.

The Lower Owens River Recreation Use Plan includes the following five goals to enhance recreation in the Lower Owens River:

1. Strengthen the area's nature-based tourist economy
2. Create opportunities for low-impact exploration and wildlife observation
3. Design a system to improve area access and wayfinding
4. Improve river and lake access for fishing, canoeing, and kayaking
5. Inspire cultural and environmental education, learning, and stewardship

The Lower Owens River Recreation Use Plan includes a preferred recreation concept that stretches from the Blackrock Waterfowl Management Area to Owens Lake. The plan includes staging areas, multi-use trails, heritage trails, birding trails, fishing access, and paddle trails. The proposed project would implement a portion of the preferred recreation concept's paddle trail from Narrow Gauge Road to Highway 136. According to the plan, community members expressed strong support for improving river access for canoes and kayaks. The preferred concept for water-based recreation includes river and lake access improvements for boaters (non-motorized craft only). Physical improvements are envisioned to be simple, low impact and low cost.

City of Los Angeles Department of Water and Power Owens Valley Land Management Plan

The Owens Valley Land Management Plan (OVLMP) was finalized by LADWP in April 2010 and provides management direction for resources on all lands owned by LADWP in Inyo County, excluding the LORP area. The OVLMP is an overarching resource management plan that complements the LORP for monitoring and managing resources from Pleasant Valley Reservoir to Owens Lake. Since the OVLMP does not include the LORP area, this plan is not applicable to the project.

[14] Lower Owens River Recreation Use Plan, Inyo County, 2013. Available: http://www.inyowater.org/wp-content/uploads/2017/08/Lower-Owens-River_Recreation-Use-Plan-DRAFT_011513.pdf. Accessed November 20, 2018.

Inyo County General Plan

The 2001 Inyo County General Plan provides the County with a consistent framework for land use decisions, including in regard to parkland and recreation facilities. Inyo County is in the process of updating its General Plan, and has published a 2013 Draft General Plan Update. According to both versions of the General Plan, the County seeks to maintain a level of service standard of three acres of community parks per 1,000 residents. The Conservation/Open Space Element of the General Plan provides goals and policies related to the provision and use of recreational facilities within the County.[15] The adopted Conservation/Open Space Element contains the following goals and policies related to recreation that are applicable to the project:

> **Goal REC-1:** Develop a public parks, recreation, and open space system that provides adequate space and facilities to meet the varied needs of County residents and visitors.
>
> > **Policy REC-1.1:** Natural Environment as Recreation. Encourage the use of the natural environment for passive recreational opportunities.
> >
> > **Policy REC-1.2:** Recreational Opportunities on Federal, State, and LADWP Lands. Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands.
> >
> > **Policy REC-1.4:** Adequate Parkland. The County shall provide adequate parkland throughout the County. The County shall require parkland dedication and/or developer impact fees for new subdivisions within the County to provide adequate recreation space for residents.
> >
> > **Policy REC-1.6:** Range of Recreational Activities/Facilities. The County shall provide for a broad range of active and passive recreational activities in community parks. When possible, this should include active sports fields and facilities in community parks that will provide for the needs of leagues and programs.

It is important to note that in the 2013 Draft General Plan Update, Policy REC-1.6 is revised so that the design of parks shall accommodate populations with special needs, such as the elderly, disabled, children, and teenagers.

The promotion and development of tourism related to recreation and the enjoyment of the natural environment within the County is addressed in the County's Economic Development Element. The Economic Development Element contains the following goal and policy related to recreation that is applicable to the project:

> **Goal ED-1:** Promote increased capacity to serve tourists within the County's established urbanized areas, and in those areas with established tourist attractions.
>
> > **Policy ED-1.3:** Visitor Usage of LADWP Lands. Encourage the LADWP to continue to allow and expand the recreational uses of their land holdings in the Owens Valley.

[15] Inyo County General Plan Conservation/Open Space Element, Inyo County, 2001.

3.9.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to recreation in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. In addition to recreation, this section includes analyzing park facilities as provided in the CEQA Appendix G, Public Services, resource area. Accordingly, a significant recreation impact would occur if the project would:

REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities, need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public parks.

Methodology

Recreation information for the project area was derived from various sources and compiled in this chapter to develop a comprehensive understanding of existing park and recreational opportunities as well as constraints that could occur as a result of the project. Information sources include Inyo County Parks and Recreation Department website, the Lower Owens River Recreation Use Plan, and the Inyo County General Plan. In addition, as requested during the Tribal consultations, the County coordinated with Bureau of Land Management and Inyo National Forest staff to understand if unintended impacts that may have occurred from the provision of recent visitor services.

3.9.4 Project Impacts

Existing Neighborhood Parks and Regional Parks

Threshold REC-1: The project would result in a significant impact if the project would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Impact Statement REC-1: *While the project would have the potential to increase the use of regional recreational facilities, it is not expected to result in a substantial physical deterioration of such recreational facilities. Therefore, the project would result in less than significant impacts to neighborhood parks and regional parks.*

The project would result in the removal of occlusions in Owens River so as to allow for the use of the river for recreational purposes by people with non-motorized watercraft. In addition, the project would develop launch and take-out facilities to provide designated areas for public access to the river. Based on input from professionals in the tourism industry, highway surveys, and

research on recreational demand, Inyo County estimates that with the proposed project, annual launches over time could reach approximately 4,400 launches per year, including private parties as well as concessionaires.[16,17] In addition to the use of the river by non-motorized watercraft such as kayaks and canoes, visitors can also use the area to fish. While the removal of occlusions would reduce ponded areas, the project would allow for more open access to the water for fishing and other recreational activities.

Currently boating opportunities in the Owens Valley are limited to small bodies of water including Klondike Lake (176 acres), Diaz Lake (76 acres), Buckley Ponds (total 46 acres), Farmers Ponds (31 acres), Saunders Pond (15 acres), and Millpond (7 acres).[18] Combined, these Owens Valley water bodies total 351 acres. The actual acreage is less if waters congested by cattail and bulrush is considered. The County had expected expanded water-based recreation under the Long Term Water Agreement. The Agreement identifies Haiwee Reservoir (642 acres) as an opportunity for water recreation, but Haiwee is closed to boating and fishing based on security concerns. The cleared section of the Owens River Water Trail would add a minimum of 11.45 acres of open water for non-motorized watercraft.

The project could draw new recreational visitors that would not otherwise come to the area and generate greater demand on existing parks throughout Inyo County. However, it is expected that the ORWT would largely be used by visitors who already come to the area. In other words, the ORWT would provide a different recreational opportunity for people that currently live in or visit the area. While ORWT interpretive signage, including QR code to launch access to maps and directions to surrounding campgrounds, would direct visitors to other local recreational areas, it is not expected that these new and current visitors would cause substantial deterioration of local County parks or larger regional facilities.

The demand for local community parks is typically based on the permanent residential population. According to the Inyo County General Plan, the County seeks to maintain a level of service standard of three acres of community parkland per 1,000 residents. As detailed above, there are approximately 140 acres of Town and County-owned parkland throughout the County. According to the U.S. Census, Inyo County had a 2017 population of 18,026 people.[19] Using the level of service standard of three acres of parkland per 1,000 residents, Inyo County should supply approximately 54 acres. Thus, the County exceeds the level of service standard and has a surplus of approximately 86 acres of parkland. This does not include the project itself, which would introduce more recreational activities to the area. The proposed project itself would not

16 Inyo County staff conferred with: Inyo National Forest Recreation Officer, Shane Hoskins; Sierra Nevada Conservancy's Eastern California Representative Danna Stroud; Inyo County's Park Manager, Steve Graves; Lone Pine Chamber of Commerce's, Kathleen New; and Eastern Sierra InterAgency Visitor Center Director, Matt Helt. In addition, documents used included: 2016 Outdoor Recreation Participation Topline Report, developed by the Outdoor Foundation; 2016 California Travel Impacts by County, sponsored by Visit California; Bureau of Reclamation's publication, "Estimating Future Recreation Demand: A decision Guide for the Practitioner."

17 A single concessionaire with a six-place kayak/canoe trailer can provide up to three daily departures on the weekend and two departures on weekdays during the high season, April through September, potentially serving 2,600 users.

18 County of Inyo, Consideration of potential new enhancement/mitigation projects in the Owens Valley. May 30, 2018. http://www.inyowater.org/wp-content/uploads/2018/08/Item-7-New-EM-Projects-Memo.pdf

19 Quick Facts, Inyo County California, U.S. Census Bureau, 2017. Available: https://www.census.gov/quickfacts/inyocountycalifornia. Accessed November 26, 2018.

induce permanent growth within the County, as it does not involve the construction of new homes or businesses that would draw population into the region. As the proposed project itself would not permanently bring people to the region, the project would not cause a direct substantial physical deterioration to County-owned recreational facilities.

As for indirect impacts on park and recreation facilities other than those owned by the County, the project could draw visitors that could visit regional recreation areas, such as Alabama Hills, Owens Lake, Diaz Lake Campground, and other local campgrounds. However, visitor demand resulting from the project would be spread throughout the region and throughout the year, and would not target one recreational facility in particular.

The proposed project would meet the County's General Plan policies detailed above by providing additional recreational opportunities to the region that would be designed to accommodate populations with special needs, and also by increasing the County's capacity to serve tourists. In addition, the Lower Owens River Recreation Use Plan specifically supports improving river access and water-based recreation. The project would be consistent with the Lower Owens River Recreation Use Plan since the project would implement a portion of the preferred recreation concept's paddle trail from Narrow Gauge Road to Highway 136.

In summary, the project would be consistent with applicable plans that address recreation. While the project could result in an increased indirect demand on surrounding recreational areas, it is reasonable to assume that this increased demand would not substantially deteriorate regional park facilities, and impacts would be less than significant.

Physical Impacts of Recreational and Park Facilities

Threshold REC-2: The project would result in a significant impact if the project would include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Threshold PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities, need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public parks.

Impact Statement REC-2: *While the project would include recreational facilities, implementation of mitigation measures would ensure that adverse physical impacts would be reduced to less than significant.*

The proposed project would provide recreational opportunities for non-motorized craft along an approximately 6.3-mile segment of the Owens River. The project would remove occlusions to establish a navigable water trail and construct a boat launch facility and a take-out facility. As detailed above, using the level of service standard of three acres of parkland per 1,000 residents, Inyo County has a surplus of approximately 130 acres of parkland above their service standard. In addition, the project itself would result in an increase in recreational activities serving the County. With regard to ongoing maintenance of the trail, these activities would be funded by the County and/or a third party.

In addition, as indicated above during Tribal consultation it was suggested that the County coordinate with BLM and U.S. Forest Service (USFS) staff to obtain lessons learned regarding recreational uses.[20] County staff coordinated with BLM and USFS staff during the preparation of the EIR. County staff was informed that stewardship and connection are essential to maintaining the project. In addition, a facilities maintenance plan should be developed. As indicated in Chapter 2, Project Description, ongoing maintenance would include tasks such as trash collection and removal; servicing and maintenance of vault toilets; occasional repairs to the gravel access roads and parking areas; as-needed repairs to livestock exclusion fencing; and vegetation maintenance. It was also suggested that the County select trash receptacles that deter disposal of household garbage. Another suggestion was to use signage to guide visitor behavior as well as to direct users to appropriate campgrounds. The County will consider the suggestions and implement those that are determined to be appropriate.

Since the project is the construction and maintenance of the water trail, the physical impacts of the proposed project have been considered throughout the discussion in Chapter 3 of this document. As discussed throughout Chapter 3, all potential impacts would either be less than significant or reduced to a less than significant level with implementation of the recommended mitigation measures. Therefore, while the project would include recreational facilities, implementation of these mitigation measures would ensure that physical impacts related to the construction of the project would be reduced to a less than significant level.

3.9.5 Cumulative Impacts

The cumulative geographic scope of park and recreation facilities is Inyo County. As detailed within Table 3-2, *Cumulative Projects Within the Project Area*, no residential projects are proposed that would directly increase population in the region. While not formally adopted, the LORP Recreation Use Plan could foreseeably be implemented, which would include multi-use trails, birding trails, a heritage trail, and other paddling trails along the Lower Owens River. Similar to the projects listed in Table 3-2, none of the recreational activities proposed under the LORP Recreation Use Plan would include a residential project that would increase population in the region. As the demand for parks is typically based on the permanent residential population, since no population increase is foreseeable, there would not be a direct cumulative impact on park or recreation facilities.

The proposed project, in combination with other cumulative projects, would result in an indirect increase of demand on park facilities due to an increase of tourists visiting the region. However, the proposed project itself would add a recreational opportunity to the region, in support of the County General Plan policies and vision of the County's Lower Owens River Recreation Use Plan. As indicated above, the LORP Recreation Plan has not been adopted but could be implemented in the future. However, no improvements are identified in the area of the water trail. The project would include maintenance of the facilities, such as trash collection, servicing of the toilets, and necessary repairs. While the proposed project, in combination with other approved and planned developments in the County would result in an increased demand on recreational

[20] Inyo County Water Department memorandum to Chairperson Genevieve Jones and Danelle Guiterrez, THPO dated January 14, 2019 summarizing County meeting with BLM staff on November 20, 2018 and USFS staff on December 17, 2018.

areas, this increased demand is not expected to substantially deteriorate regional park facilities. Therefore, the project would not contribute to a cumulatively significant impact regarding parks and recreation.

3.9.6 Mitigation Measures

Since the proposed project includes recreational facilities, the physical impacts of the proposed project have been considered throughout the discussion in Chapter 3 of this document. All potential environmental impacts would either be less than significant or reduced to a less than significant level with implementation of the recommended mitigation measures.

3.9.7 Level of Significance After Mitigation

The proposed project could draw new recreational visitors and generate greater demand on existing parks throughout Inyo County, however, it is expected that the project would largely be used by visitors who already utilize and visit the area. While the proposed project could result in an increased demand on surrounding recreational areas, it is reasonable to assume that substantial deterioration of regional park facilities is not expected to occur or be accelerated, and impacts would be less than significant. Since the proposed project includes recreational facilities, the physical impacts of the proposed project have been considered throughout the discussion in Chapter 3 of this document. All potential environmental impacts would either be less than significant or reduced to a less than significant level with implementation of the recommended mitigation measures.

3.10 Tribal Cultural Resources

This section provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed project. Tribal cultural resources are analyzed in a standalone chapter of this Draft EIR, separate from other types of cultural resources (i.e., historical, archaeological, paleontological, human remains, which are addressed in Chapter 3.4 "Cultural Resources"), in accordance with the revisions to CEQA Guidelines Appendix G, as approved by the Office of Administrative Law on September 27, 2016. This chapter recognizes that California Native American Tribes have expertise concerning identification, evaluation, and mitigation of their tribal cultural resources.

"Tribal cultural resources" are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (California Register) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant (Public Resources Code [PRC] subdivision 21074(a)). A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. A historical resource, unique archaeological resource, or non-unique archaeological resource may also be a tribal cultural resources if it meets these criteria.

The analysis in this section is based, in part, on the results of a Sacred Land Files (SLF) search from the California Native American Heritage Commission (NAHC) and Assembly Bill 52 (AB 52) outreach with California Native American Tribes that are traditionally and culturally affiliated with the geographic area in which the proposed project is located and who have requested in writing to be informed by the lead agency.

3.10.1 Environmental Setting

Ethnographic Setting

The proposed project lies within an area where several ethnographic groups, including the Koso Shoshone and Owens Valley Paiute, claim affiliation. The lifeways of these groups are characteristic of the Late Prehistoric Period. The euroamerican incursion beginning in the mid-1800s contributed heavily to the depopulation of the Shoshone from traditional use area following the establishment of white settlements in Rose Valley and southern Owens Valley. Increased mining and ranching activities, followed by the establishment of a railway and the Los Angeles Aqueduct forever changed the Koso homeland. By the 1930's, those Shoshone remaining in the region had relocated to the Owens Valley Indian reservations at Lone Pine, Big Pine, Fort Independence, and Bishop (Parr et al., 2001). Furthermore, the way of life of the Owens Valley Paiute changed drastically in the year after euroamerican settlement. Their lands were taken away and they became influenced by immigrant populations of neighboring Native American groups, who brought with them a major distrust and hatred of the settlers. The Owens Valley Paiute survived years of conflict and relocation and still remain in the valley, although they are mixed

with groups of neighboring Native American groups brought into the aforementioned reservations (Parr et al., 2001).

Identification of Tribal Cultural Resources

Sacred Lands File Search

The NAHC maintains the confidential SLF, which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on June 20, 2018 to request a search of the SLF. The NAHC responded to the request in a letter dated June 25, 2018. The results of the SLF search conducted by the NAHC indicate that Native American cultural resources are not known to be located within the proposed project area.

Assembly Bill 52 Consultation

Pursuant to AB 52 (discussed below in Section 3.10.2, *Regulatory Framework*), which requires government-to-government consultation within the CEQA process, the County contacted eight California Native Tribes who have previously requested in writing to be informed by the County through formal notification of proposed projects within the geographic area in which the tribe is traditionally and culturally affiliated pursuant to 21080.3.1(b). The eight tribes include the Twenty-Nine Palms Band of Mission Indians, the Big Pine Paiute Tribe of the Owens Valley, the Cabazon Band of Mission Indians, the Timbisha Shoshone Tribe, the Bishop Paiute Tribe, the Torres Martinez Desert Cahuilla Indians, the Lone Pine Paiute-Shoshone Tribe, and the Fort Independence Indian Community of Paiutes. The County sent letters to 13 individuals associated with the eight tribes on May 23, 2018 (**Table 3.10-1**). The letters included a description of the proposed project and provided a figure depicting the proposed project location.

TABLE 3.11-1
SUMMARY OF AB 52 CONSULTATION EFFORTS

Contact	Tribe/Organization	Date Letter Mailed	Response
Anthony Madrigal, Jr., Tribal Historic Preservation Officer	Twenty-Nine Palms Band of Mission Indians	5/8/2018	In a letter dated 6/5/18, Mr. Madrigal stated that tribal cultural resources are not know in the proposed project, but requested the opportunity to review the results of additional surveys before giving further recommendations.
Danelle Guiterrez, Tribal Historic Preservation Officer	Big Pine Paiute Tribe of the Owens Valley	5/8/2018	In an email dated 5/31/18, Jill Paydon, Tribal Administrator for the Big Pine Paiute Tribe, requested to consult on the proposed project
Darrell Mike, Tribal Chairperson	Twenty-Nine Palms Band of Mission Indians	5/8/2018	-
Doug Todd Welmas	Cabazon Band of the Mission Indians	5/8/2018	-
George Gholson, Chairperson	Timbisha Shoshone Tribe	5/8/2018	-
Genevieve Jones, Chairperson	Big Pine Paiute Tribe of the Owens Valley	5/8/2018	In an email dated 5/31/18, Jill Paydon, Tribal Administrator for the Big Pine Paiute Tribe, requested to consult on the proposed project
Jacquelyn Barnum, Environmental Director	Cabazon Band of the Mission Indians	5/8/2018	-

Contact	Tribe/Organization	Date Letter Mailed	Response
Monty Bengochia, Tribal Historic Preservation Officer	Bishop Paiute Tribe	5/8/2018	-
Michael Mirelez, Cultural Resource Coordinator	Torres Martinez Desert Cahuilla Indians	5/8/2018	-
Mary Wuester, Chairperson	Lone Pine Paiute-Shoshone Tribe	5/8/2018	-
Norman Wilder, Chairperson	Fort Independence Indian Community of Paiutes	5/8/2018	-
Valerie Spoonhunter, Interim Tribal Administrator	Bishop Paiute Tribe	5/8/2018	-
William Vega, Chairperson	Bishop Paiute Tribe	5/8/2018	-

To date, the County has received responses to the AB 52 notification letters from two groups including the Big Pine Paiute Tribe and the Twenty-Nine Palms Band of Mission Indians.

Big Pine Paiute Tribe

In an email dated May 31, 2018, Jill Paydon, Tribal Administrator for the Big Pine Paiute Tribe, requested consultation with the County regarding the proposed project. The County met with representatives of Big Pine Paiute Tribe on June 18, 2018. The Big Pine Paiute Tribe expressed concern about the proposed project drawing large crowds to the area and the possible impacts the crowds would have on plants, animals and the general safety of people from driving in areas that should be off limits, mistreatment of wildlife, and trammeling. The Big Pine Paiute Tribe also expressed concern about the lack of evacuation routes in the event of fire, earthquake or other natural disasters. The Big Pine Paiute Tribe recommended that the County consult with the Bureau of Land Management (BLM), Inyo National Forest (INF), and Joshua Tree National Park about overcrowding in recreational areas managed by the respective agencies in an effort to anticipate the potential for overuse and abuse of the proposed project area by recreational users.

On November 20 and December 17, 2018, and February 11, 2019, the County conferred with staff from the BLM, INF, and Joshua Tree National Park, respectively, based on the Twenty-nine Palm Band of Mission Indians, and the Big Pine Paiute Tribe's recommendation. All three agencies offered insights into how impacts associated with crowds of recreational users might be reduced with strategies including but not limited to educational and interpretative signage, trash receptacles, restrooms, natural barriers, and maintenance and stewardship programs.

On February 28, 2019, The County met with the Big Pine Paiute Tribe to discuss the proposed project. The County provided the cultural resources assessment report prepared for the proposed project to the Big Pine Paiute Tribe for their review and comment. The County requested that the Big Pine Paiute Tribe provide comments on the report by the end of the following week, March 8. No comments were received and the County followed up via a phone call to Danelle Gutierrez, Tribal Historic Preservation Officer (THPO) for the Big Pine Paiute Tribe, on March 20 to inquire if any comments were forthcoming**.** The County sent a follow-up email on April 12

asking if the Big Pine Paiute Tribe had comments on the report and asked that the comments be received by the morning of April 15. In an email dated April 15, 2019, Ms. Gutierrez expressed concerns about sharing interpretative information that lacked perspectives of the Tribe, and that information regarding the location of archaeological resources should be omitted from public view to inhibit looting and destruction. Ms. Gutierrez asked if she could submit formal comments on April 17. No additional comments from the Big Pine Paiute Tribe have been received to date; however, consultation with the Big Pine Paiute Tribe is ongoing.

Twenty-Nine Palms Band of Mission Indians

In a letter dated June 6, 2018, Anthony Madrigal Jr., THPO for the Twenty-Nine Palms Band of Mission Indians, responded to the County's notification letter stating that he is unaware of any known tribal cultural resources within the proposed project area, but expressed the need for a Phase I cultural resources study to be prepared for the proposed project. Mr. Madrigal requested the THPO be allowed to review the results of additional surveys before providing further recommendations. Mr. Madrigal stated that if no response was received within 30 days of the County's receipt of his letter, the Twenty-Nine Palms Band of Mission Indians would automatically elect to be a consulting party. The County responded in a letter dated July 23, 2018, stating that a Phase I cultural resources study is being prepared for the proposed project and that the County will share their results of the study with the Twenty-Nine Palms Band of Mission Indians and solicit comment. On February 1, 2019, the County provided the cultural resources assessment report to the Twenty-Nine Palms Band of Mission Indians for review and comment, and requested comments by February 10, 2019. The County followed-up with the Twenty-Nine Palms Band of Mission Indians via a phone call on February 12, 2019, but no response has been received to date. Consultation with the Twenty-Nine Palms Band of Mission Indians has concluded.

3.10.2 Regulatory Framework

State

Assembly Bill 52

Assembly Bill 52 (AB 52) was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr. on September 25, 2014. The act amended California PRC section 5097.94, and added PRC sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC subdivisions 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the

final text for tribal cultural resources update to Appendix G of the *CEQA Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC section 21080.3.1 requires, within 14 days after a lead agency determines an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency must provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC section 21073) and who have requested in writing to be informed by the lead agency (PRC subdivision 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days after receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days after receiving the tribe's request for consultation (PRC subdivisions 21080.3.1(d) and (e)).

PRC subdivision 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, project alternatives or appropriate measures for preservation, and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC subdivision 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to PRC section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with PRC subdivision 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, then the lead agency may certify an EIR or adopt an MND without further requirements for consultation. (PRC subdivisions 21082.3(d)(2) and (3)).

PRC subdivision 21082.3(c)(1) states any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, then that information shall be published in a confidential appendix to the environmental document, unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Local

Inyo County Tribal Consultation Policy

The Inyo County Tribal Consultation Policy, adopted by the County Board of Supervisors on October, 11, 2016, was developed in response to AB 52 and is consistent with the requirements and procedures outlined in PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. The intent of the policy is to establish a consistent, efficient, and culturally suitable consultation protocol for the County when conducting intergovernmental consultation under existing State and local laws.

3.10.3 Thresholds and Methodology

Thresholds of Significance

In assessing the project's potential impacts related to tribal cultural resources in this section, the County has determined to use Appendix G of the State CEQA Guidelines as its thresholds of significance. Accordingly, a significant tribal cultural resources impact would occur if the project would:

Cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

> **TRC-1** Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC subdivision 5020.1(k), or
>
> **TRC-2** A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1. In applying the criteria set forth in subdivision (c) of PRC section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Methodology

Under CEQA, the evaluation of impacts to tribal cultural resources consists of two-parts: (1) identification of potential tribal cultural resources within the project site or immediate vicinity through AB 52 consultation, as well as a the results of SLF and California Historical Resources Inventory System (CHRIS) records searches, and review pertinent academic and ethnographic literature for information pertaining to past Native American use of the project site review and; (2) a determination of whether the project may result in a "substantial adverse change" in the significance of the identified resources.

3.10.4 Project Impacts

Historical Resources

Threshold TCR-1: The project would result in a significant impact if the project would cause a substantial adverse change in the significance of a tribal cultural resource (PRC Section 21074) that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC subdivision 5020.1(k).

Impact Statement TCR-1: *The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources.*

No tribal cultural resources were identified as a result of the AB 52 consultation process. Therefore, no tribal cultural resources that are listed in or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k) would be impacted by the project and no impact would occur.

Tribal Cultural Resources

Threshold TCR-2: The project would result in a significant impact if the project would cause a substantial adverse change in the significance of a tribal cultural resources (PRC Section 21074) that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1.

Impact Statement TCR-2: *The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant.*

No tribal cultural resources were identified as a result of the AB 52 consultation process. Therefore, no tribal cultural resources that have been determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1, would be impacted by the project and no impact would occur.

3.10.5 Cumulative Impacts

No tribal cultural resources have been identified within the project area as a result of AB 52 consultation and the project would have no impacts to tribal cultural resources during construction and operation. Therefore, the project would not contribute to a significant cumulative impact on tribal cultural resources.

3.10.6 Mitigation Measures

Implementation of the project would have no impact on tribal cultural resources and no mitigation measures are required.

3.10.7 Level of Significance After Mitigation

The project would result in no impacts to tribal cultural resources.

CHAPTER 4
Alternatives

4.1 Introduction

This section of the EIR evaluates alternatives to the proposed project, and analyzes the comparative environmental impacts associated with each alternative. Under CEQA, and as indicated in California Public Resources Code Section 21002.1(a), the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process intended to consider ways to mitigate or avoid the significant environmental effects of a project. Guidance regarding the definition of project alternatives is provided in State *CEQA Guidelines* Section 15126.6(a) as follows:

> *An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*

The State *CEQA Guidelines* emphasize that the selection of project alternatives be based primarily on the ability to reduce significant impacts relative to the proposed project, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."[1] The State *CEQA Guidelines* further direct that the range of alternatives be guided by a "rule of reason," such that only those alternatives necessary to permit a reasoned choice are analyzed.[2]

In selecting project alternatives for analysis, potential alternatives should be feasible. The State *CEQA Guidelines* Section 15126.6(f)(1) explains that:

> *Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.*

The State *CEQA Guidelines* require the analysis of a "no project" alternative and, depending on the circumstances, evaluation of alternative location(s) for the project, if feasible. Based on the

1 CEQA Guidelines Section 15126.6(b).
2 CEQA Guidelines Section 15126.6(f).

alternatives analysis, an environmentally superior alternative is to be designated. In general, the environmentally superior alternative is the alternative with the least adverse impacts on the environment. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives.[3]

Section 15126.6(d) of the State *CEQA Guidelines* states that alternatives analysis need not be presented in the same level of detail as the assessment of the proposed project. Rather, the EIR is required to provide sufficient information to allow meaningful evaluation, analysis and comparison with the proposed project. If an alternative would cause one or more significant impacts in addition to those of the proposed project, analysis of those impacts is to be discussed, but in less detail than for the proposed project.

4.2 Project Purpose and Objectives

The State CEQA Guidelines requires an EIR to include a statement of objectives that addresses the underlying purpose of the project. As described in Chapter 2, Project Description, of this EIR the County's underlying purpose is to create a water trail to allow recreational access for non-motorized watercrafts on a portion of the Owens River. Pursuant to CEQA Guidelines Section 15124(b), the County has identified the following objectives for the proposed ORWT:

- Provide all-abilities access to the ORWT as a recreational resource;
- Provide recreational and educational opportunities for the surrounding community and visitors;
- Implement restoration activities for the natural habitats and species of the Owens River to be consistent with the restoration efforts of the LORP. The LORP calls for the creation and enhancement of natural habitats to be consistent with the needs of certain habitat indicator species through the application of appropriate flow and land management practices; and
- Remain consistent with the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan, which include:
  - Continue to prioritize LORP goals and the ecological restoration of riparian habitat over recreation;
  - Minimize conflict between recreation, ranching and LADWP operations by installing signs, cattle guards, and gates where needed and by improving some roads;
  - Protect existing cultural resources, artifacts and areas by collaborating with local Tribes and steering recreation away from sensitive areas; and
  - Place clear and frequent signage in strategic locations to outline area use guidelines and restrictions, and to share information about existing operations.

[3] CEQA Guidelines Section 15126.6(e)(2).

4.3 Alternatives Considered and Rejected

The State CEQA Guidelines Section 15126.6(c) recommends that an EIR identify alternatives that were considered for analysis but rejected as infeasible and briefly explain the reasons for their rejection. According to the State CEQA Guidelines, the following factors may be used to eliminate alternatives from detailed consideration: the alternative's failure to meet most of the basic Project Objectives, the alternative's infeasibility, or the alternative's inability to avoid significant environmental impacts. Alternatives that have been considered and rejected as infeasible are discussed below.

ESA prepared a Hydraulic Analysis, which is provided in Appendix B-1 of this EIR. ESA used the one-dimensional HEC-RAS models developed in 2012 by Northwest Hydraulic Consultants (NHC) under contract to Los Angeles Department of Water and Power (LADWP).

ESA adapted existing hydraulic models of a portion of the project area to evaluate various vegetation clearing and dredging treatments. Five scenarios were simulated to assess the potential effects of vegetation clearing and occlusion removal for the varying levels of vegetation clearing, and location and depth of excavation, and channel width. Scenario 5 is the project evaluated in this Draft EIR and therefore, the characteristics of Scenarios 1 through 4 are summarized in **Table 4-1, *Characteristics of Alternative Design Scenarios***, and are discussed below. Scenario 1 and Scenario 2 are based on Inyo County's Construction Plan.[4] Scenario 3 and Scenario 4 were developed to provide a range of options and to consider scenarios with reduced excavation.

TABLE 4-1
CHARACTERISTICS OF ALTERNATIVE DESIGN SCENARIOS

Characteristics	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Clearing Vegetation	Minimum 10 ft-wide along entire project length	Minimum 10 ft-wide along entire project length	Minimum 10 ft-wide along entire project length	Minimum of 6 ft-wide along entire project length
Excavation Location	At mapped occlusions	Along entire project length	In marsh region to create continuous 10 ft-wide channel	In marsh region to create continuous 6 ft-wide channel
Excavation Dimensions	10 ft-wide section at 7 ft below *existing* WSE	10 ft-wide section at 4 ft below *design* WSE	10 ft-wide channel at uniform slope through marsh region	6 ft-wide channel at uniform slope through marsh region
Estimated Excavation Volume (CY)	4,737 cy	42,729 cy	831 cy	465 cy
Vegetation Maintenance Length (ft)	12,717 ft	0 ft	14,595 ft	13,068 ft
Method of Maintenance	Active as needed; some passive	Passive due to river flow	Active as needed; some passive	Active as needed; some passive

Notes:
WSE = Water surface elevation
CY = cubic yards
Source: ESA, Hydraulics Memo, 2019

[4] Inyo County prepared a Construction Plan (dated September 19, 2016), which is a visioning plan that was prepared early in the process and was intended for discussion purposes with stakeholders.

Scenario 1 would result in a minimum 10-foot wide channel along the approximately 6.3 miles of water trail. Excavation of the channel bed would be done from a barge and would only occur at mapped occlusions, including the marsh region, to create a depth of 7 feet below the existing water level. The remaining portions of the river would not be excavated. Scenario 1 would result in the removal of approximately 4,737 cy of material.

Scenario 2 like Scenario 1, would result in a minimum 10-foot wide channel along the approximately 6.3 miles of water trail. In addition, Scenario 2 would result in the highest volume of excavation material since excavation would occur along the entire length of the water trail to establish a continuous 4-foot water depth. Excavation would be barged based and under Scenario 2 the occlusions would be excavated to at least below the aquatic vegetation root level. Scenario 2 would result in the removal of approximately 42,729 cy of material, which represents the greatest amount of excavation among the scenarios evaluated.

Scenario 3 would result in a minimum 10-foot wide channel along the approximately 6.3 miles of water trail. Under Scenario 3, it is assumed that no excavation would be performed at occlusions and just vegetation removal would occur either through mowing or clearing methods. Scenario 3 would limit excavation to the marsh region to create a continuous 10-foot wide single channel. Implementation of Scenario 3 would result in the removal of approximately 831 cy of material.

Scenario 4 would result in a minimum 10-foot wide channel along the approximately 6.3 miles of water trail. Scenario 4 would limit excavation activities to the marsh region to create a continuous 6-foot wide single channel. In Scenario 4, it is assumed that no excavation would be performed at occlusions and only vegetation removal would occur either by mowing or clearing methods. Implementation of Scenario 4 would result in the removal of approximately 465 cy of material.

In summary, the hydraulic model results suggest that for all design scenarios recreational passage of paddle craft would be possible. A key difference between the scenarios is the method of initial channel excavation. For Scenarios 1 and 2, it was assumed that a barge-based excavator would be placed at either the upstream or downstream end of the water trail and would excavate throughout the length of the project area.[5] The minimum depth requirement for a loaded barge was assumed to be 4 feet.[6] As such, Scenario 1 and Scenario 2 did not meet this minimum depth requirement.

For Scenarios 3 and 4, it was assumed that the continuous depth requirement of 4 feet needed for the barge would not be met and that excavation would be conducted via either amphibious vehicle (e.g., Truxor or Aquamog) with an amphibious excavator, or terrestrially. In addition, while Scenarios 3 and 4 would reduce the amount of excavation and materials, these scenarios would not result in the removal of the occlusions to open up the river channel to the same extent as the project. Based on the analyses contained in the Hydraulics Analysis in Appendix B-1 of

[5] For barge-based excavation, it was assumed that the barge would require a minimum depth of 3 ft across a 10 ft-wide section of channel, which could increase to 4 ft required depth, depending on the load carried by the barge.

[6] A minimum depth of 3 ft across a 10 ft-wide section of channel would be needed to accommodate a barge, which could increase to 4 ft required depth, depending on the load carried by the barge.

this EIR, the four scenarios described above were determined to be not feasible and were rejected from further consideration as alternatives.

4.3.1 Alternative Off-Site Locations

State CEQA Guidelines Section 15126.6(f)(2) provides guidance regarding consideration of one or more alternative location(s) for a proposed project, stating that putting the project in another location should be considered if doing so would allow significant effects of the project to be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. If no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion. Among the factors that may be considered when addressing the feasibility of an alternative site is suitability, economic viability, availability of infrastructure, general plan consistency, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.

The project would implement the Lower Owens River Recreation Use Plan. The Plan identifies the Lower Owens River Paddle Trail, which includes two paddle segments with signed and improved access to the river from the riparian shore. The proposed project would implement the south segment, which is identified to run roughly from the Lone Pine Staging Area to the Pumpback Station. The north paddle trail segment would run much of the length of the Blackrock Wetland Management Area (WMA), beginning just north of Upper Twin Lake and ending near the WMA boundary. (The river tails are shown on the Preferred Recreation Concept figure contained in the Lower Owens River Recreation Use Plan.)

The County determined that the south segment is preferable for implementation of the proposed project in light of the existing condition of the river in the north segment. The north segment is located in a WMA. The river is narrow and the surface of the river is approximately six to seven feet below the floodplain in some locations. In addition, the development of the trail would be more difficult given the tule growth. The floodplain is also incised, which would make development and use of a water trail more difficult. The north segment is also in an area in which access would be more complicated to develop in light of the biological resources. The area also has a higher level of maintenance by LADWP because of the wetland management that is required.

Given these environmental constraints, the County has determined that implementing the proposed project in the north segment would not be feasible and is not considered further as a project location alternative. Since the Lower Owens River Recreation Use Plan identifies two segments for development of water trails, creation of the trail in a third location in this area would conflict with the Plan.

4.4 Alternatives Selected for Analysis

As described above, according to CEQA Guidelines Section 15126.6(a) the purpose of analyzing project alternatives is to identify alternatives that "…*would avoid or substantially lessen any of the significant effects of the project."* Based on the analysis contained in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this EIR, the project would not result in any significant and unavoidable environmental impacts. However, impacts would occur to biological resources, cultural resources, geology and soils, hydrology and water quality, and recreation, all requiring mitigation to reduce impacts to a less than significant level.

According to Section 15126.6(e) of the CEQA Guidelines, an EIR alternatives analysis should include the analysis of a No Project Alternative to allow decision makers to compare the impacts of approving a proposed project with the impacts and foreseeable future of not approving that project.

The alternatives listed below were selected for analysis. A description of the alternatives is provided in Section 4.5, below.

- Alternative 1 – No Project Alternative
- Alternative 2 – Alternative Construction Approach
- Alternative 3 – Alternative Location of Put-In Facility
- Alternative 4 – Off-Site Disposal of Materials Alternative

4.5 Analysis Format

In accordance with State CEQA Guidelines Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less than, similar to, or greater than the corresponding impacts of the proposed project. Furthermore, each alternative is evaluated to determine whether the project objectives, identified in Chapter 2, Project Description, would be substantially attained by the alternative. The evaluation of each of the alternatives follows the process described below:

- A description of the alternative.
- The net environmental impacts of the alternative before and after implementation of reasonable mitigation measures for each environmental issue area analyzed in the EIR are described. Where applicable, the evaluation is divided between temporary impacts that would occur during the project's construction phase, and impacts that would occur during the project's operational phase.
- Post-mitigation and less than significant environmental impacts of the alternative and the project are compared for each environmental topic area. Where the impact of the alternative would be clearly less than the impact of the project, the comparative impact is said to be "less." Where the alternative's net impact would clearly be more than the project, the comparative impact is said to be "greater." Where the impacts of the alternative and project would be roughly equivalent, the comparative impact is said to be "similar." Where the impacts of the alternative would be the same as the project, the comparative impact is said to be the "same." The evaluation also documents whether compared to the project an impact

would be entirely avoided, whether a significant impact could be reduced to a less than significant level, or whether a significant unavoidable impact would be feasible to mitigate to a less than significant level.

- The comparative analysis of the impacts is followed by a general discussion of the extent to which the underlying purpose and project objectives are attained by the alternative.

At the end of the section, a relative comparison of the alternative's impacts and consistency with Project Objectives is provided. Pursuant to State CEQA Guidelines Section 15126.6(e)(2) an "Environmentally Superior Alternative" is identified.

4.6 Alternatives Analysis

4.6.1 Alternative 1: No Project Alternative

Description of the Alternative

In accordance with the CEQA Guidelines, the No Project Alternative (Alternative 1) for a development project on an identifiable property consists of the circumstance under which the project does not proceed. Section 15126.6(e)(3)(B) of the Guidelines states that, "in certain instances, the No Project Alternative means 'no build' wherein the existing environmental setting is maintained." Under the No Project Alternative, the Owens River Water Trail would not be created and the approximately 6.3-mile segment of the Owens River would remain in its current condition. The No Project Alternative would not result in the removal of vegetation and occlusions from the river. In addition, no widening or creation of a channel would occur. As a result, no materials would be stockpiled on the areas surrounding the river. In addition, the facilities associated with the water trail, including the launch pad and take-out areas would not be developed. Also, no parking area or vault toilets, picnic area, or trash cans for the visitors and users of the water trail would be provided. The restoration of the river that would result from the implementation of the project would not occur.

Environmental Impacts

Aesthetics

Under the No Project Alternative, the water trail would not be created and the boat launch and take-out facilities would not be constructed. Under this alternative, the existing visual qualities of the project area, which are natural in appearance, would remain unchanged and continue to be undeveloped. The existing visual characteristics and quality of the surrounding project area would also remain unchanged under this alternative. Under the No Project Alternative, there would be no short-term visual impacts to the natural setting of the river associated with construction of the project. In addition, there would be no long-term changes since none of the associated facilities would be developed. Although this alternative would maintain the existing visual character and quality of the project area, the No Project Alternative would not include the removal of existing tules and occlusions, which would increase the visibility of a large portion of the approximately 6.3-mile stretch of river and improve the visual quality of the project area. Furthermore, under this alternative, the County would not maintain the project area and would not install educational signage for residents or visitors, which could be considered benefits to creating and maintaining

the aesthetic quality of the project area. Because neither the No Project Alternative nor the proposed project would cause a significant environmental impact related to aesthetics, their level of impact in this regard would be similar.

Air Quality

Under Alternative 1, no construction activities would occur, including excavation of the river channel or use of heavy-duty equipment. In addition, operational activities, including vehicular traffic associated with the project, would not occur. Since there would be no construction or operational activities, no emissions would be associated with this alternative. As detailed in Section 3.2, Air Quality, of this EIR, implementation of the proposed project would not conflict with air quality plans, result in a net increase of criteria pollutants, or expose sensitive receptors to substantial pollutant concentrations. Because neither the No Project Alternative nor the proposed project would cause a significant environmental impact related to air quality, their level of impact in this regard would be similar.

Biological Resources

Under the No Project Alternative, no construction or operational activities would occur in the project area, as the river channel and surrounding area would remain undeveloped open space. Since there would be no construction or operational activities, impacts to special-status plant and wildlife species, which were determined to be significant and required mitigation with project implementation, would not occur. Similarly, impacts to sensitive natural communities, riparian habitat, wetlands, waters of the US, wildlife corridors, native wildlife nursery sites, which required mitigation with project implementation, would not occur. Therefore, since this alternative would avoid significant impacts to biological resources, the No Project Alternative would result in less impacts to biological resources compared to the proposed project.

Cultural Resources

Under Alternative 1, construction activities associated with the water trail would not occur, including ground disturbing activities. Since there would be no construction or operational activities, impacts to archaeological resources, which were determined to require mitigation with project implementation, would not occur. Therefore, since this alternative would avoid significant impacts to archaeological resources, Alternative 1 would result in less impacts related to cultural resources compared to the proposed project.

Geology and Soils

Under the No Project Alternative, no construction activities, including excavation of the river channel, would occur and no new permanent development would occur in the project area. Since there would be no construction activities in and around the river channel, impacts to soil erosion and loss of topsoil, which were determined to be significant and required mitigation with project implementation, would not occur. Under the No Project Alternative, impacts associated with all other geologic hazards would be similar to that of the proposed project. Therefore, since this alternative would avoid significant impacts to soil erosion and loss of topsoil, the No Project Alternative would result in less impacts to geology and soils compared to the proposed project.

Greenhouse Gas Emissions

Under the No Project Alternative, no construction or operational activities would occur in the project area, as the river channel and surrounding area would remain undeveloped open space. Since there would be no construction or operational activities, no greenhouse gas (GHG) emissions would be generated under the No Project Alternative. As discussed in Section 3.6, Greenhouse Gas Emissions, of this EIR, implementation of the proposed project would not exceed construction or operational GHG emission thresholds and therefore would result in less than significant impacts relative to GHG emissions. Because neither the No Project Alternative nor the proposed project would cause a significant environmental impact related to GHG emissions, their level of impact in this regard would be similar.

Hydrology and Water Quality

Under the No Project Alternative, no construction activities, including excavation of the river channel, would occur and no development of associated facilities would occur in the project area. Since there would be no construction or operational activities in and around the river channel, impacts to hydrology and water quality, which were determined to be significant and required mitigation with project implementation, would not occur. Since the existing hydrology and water quality would be maintained under this alternative, no mitigation measures would be required. Therefore, impacts to hydrology and water quality under the No Project Alternative would be less compared to the proposed project.

Land Use and Planning

Under the No Project Alternative, the Lower Owens River would maintain its undeveloped, natural setting and a new recreational water trail would not be created in Inyo County. The No Project Alternative would not conflict with any applicable land use plan as the project area would remain in its existing condition and as such, the No Project Alternative would not result in a significant environmental impact. Compared to the proposed project, this alternative would not achieve the goals of the County's Recreational Use Plan, which recommends a new water-based recreational facility to be developed along the Lower Owens River in the project area, or the County's General Plan, which aims to provide additional recreational opportunities in the region. Because neither the No Project Alternative nor the proposed project would cause a significant environmental impact related to land use and planning, their level of impact in this regard would be similar.

Recreation

Under the No Project Alternative, the water trail would not be created and as such, a new water-based recreational facility would not be developed within the County. Under this alternative, accessibility to the river for recreational use would not be provided for visitors and residents alike, as the river is not easily accessible to watercraft in its current form. In fact, the river is becoming more occluded along its length as vegetation grows. In addition, this alternative would not provide an additional recreational facility in the County, which is an aim of both the County's General Plan and Recreational Use Plan. The No Project Alternative would not cause the deterioration of existing parks and recreational facilities and would not cause new parks or recreational facilities to be built. Therefore, no impacts to parks and recreational facilities would

occur under this alternative. Under the proposed project, mitigation would be required since the proposed project itself is a recreational facility, the construction of which would cause mitigatable impacts. Therefore, impacts to recreational resources under the No Project Alternative would be less compared to the proposed project.

Tribal Cultural Resources

Under Alternative 1, no construction activities, including excavation of the river channel, would occur and no development of associated facilities would occur in the project area. There would be no effect to tribal cultural resources, as the project area would maintain in its undeveloped, natural setting. Because neither the No Project Alternative nor the proposed project would cause a significant environmental impact related to tribal cultural resources, the level of impact in this regard would be similar.

Relationship of the Alternative to the Project Objectives

Under the No Project Alternative, construction of the proposed project would not occur, and the Lower Owens River would maintain its undeveloped, natural setting. The No Project Alternative would not meet any of the project objectives detailed above in Section 4.2. Without implementation of the proposed project, the No Project Alternative would not provide access to the approximately 6.3-mile segment of the Owens River as a recreational resource and would not provide recreational and educational opportunities for the surrounding community and visitors. Additionally, the No Project Alternative would not include restoration activities for natural habitats, and would not meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan. Therefore, no objectives of the proposed project would be met by this alternative.

4.6.2 Alternative 2: Alternative Construction Approach

Description of the Alternative

The Alternative Construction Approach (Alternative 2) would result in the same development of the Owens River Water Trail as the project and therefore, would create a water trail to allow recreational access for non-motorized watercraft. This alternative would occur on the same stretch of the river as the project and would result in an approximately 6.3-mile water trail for non-motorized watercraft. As with the project, the Alternative Construction Approach would result in the removal of vegetation and occlusions from the river but using a different method than the project, as described below.

Under this alternative, construction would proceed from the upstream project limit to the downstream limit in a single step process. (The process is more fully described in the Alternative Construction Method Report, which is provided in Appendix F of this EIR.) An amphibious excavator would proceed along the river bank and would remove occlusions and emergent vegetation in a single step. The equipment, which has a lower ground pressure than standard heavy equipment, is designed to work in these types of ecosystems. The contractor may opt to have two or more pieces of machinery operating concurrently, which would reduce the overall construction time. Spoils would be placed adjacent to the river rather than being transported to the

stockpile locations identified for the project. Spoils would be placed a minimum of 15 feet from the edge of water in order to utilize existing vegetation as filter strips to minimize the movement of sediments. Placed spoils would be contoured to conform to adjacent existing grade and to minimize the disturbance of existing flow paths.

Under the Alternative Construction Approach, the amphibious excavator would proceed along the river until the end of the work day. At the completion of a work day the operator would drive the excavator along designated access routes to a location a minimum of 150 feet from the edge of water. The access routes under this Alternative would be the same as those identified for the project. All refueling and maintenance would occur a minimum of 150 feet from the edge of water.

With regard to maintenance, under the Alternative Construction Approach maintenance would be essentially the same as the project. Under the Alternative Construction Approach, annual maintenance would be similar in duration to maintenance under the project but would differ in the method. Under this alternative, maintenance would be done by hand or using a small CAT marsh buggy or similar multifunctional amphibious equipment designed for cutting and collection of vegetation. The equipment used for maintenance would move down the channel corridor and would remove benthic aquatic vegetation that might start to overgrow the channel. All cut material would be captured and removed from the river. Spoils would be limited and would be placed along the banks of the channel set back a minimum of 15 feet from the water's edge. It is anticipated that two workers per day would perform the mechanical maintenance during the maintenance period and hand work would involve six to ten individuals working six to twelve work days per year.

As described above, Alternative 2 would develop the water trail and the boat launch and take-out facilities as described for the proposed project. However, the construction method would be different under Alternative 2. Because there is no difference between Alternative 2 and the project during operation, the following analyses focus on the difference in environmental impacts of construction between the project as proposed and this alternative. However, the overall comparisons and conclusions consider the whole of the project and Alternative 2.

Environmental Impacts

Aesthetics

Alternative 2 would largely be similar to the proposed project, except for the use of an amphibious excavator during construction of the water trail for the removal of in-channel occlusions. Similar to the proposed project, construction equipment associated with the in-channel work would be partially screened from public long-range views due to existing development and vegetation. Under Alternative 2, spoils would be placed adjacent to the river rather than being transported to the stockpile locations identified for the project. Spoils would be placed a minimum of 15 feet from the edge of water in order to utilize existing vegetation as filter strips to minimize movement of sediments. Placed spoils would be contoured to smoothly conform to adjacent existing grade. The spoils would be relatively low-laying and would not be easily seen from surrounding public views, and existing vegetation would further block views,

similar to the proposed project. Because neither Alternative 2 nor the proposed project would cause a significant environmental impact related to aesthetics, the level of impact in this regard would be similar.

Air Quality

Alternative 2 would alter the proposed project's construction method by using an amphibious excavator along the river bank to remove occlusions and emergent vegetation in a single step. The contractor may opt to have one or more pieces of machinery operating concurrently to reduce the overall construction time for Alternative 2. This analysis of concurrent equipment was also analyzed as a conservative approach under the proposed project. Analysis of the proposed project's construction of the water trail assumed the use of both in-channel and land-based equipment concurrently and assumes an amphibious excavator, a tracked excavator, an amphibious vegetation cutter, as well as a Morooka MST and skid steer loader for transport to and placement of vegetation in separate spoils areas. The conditions under Alternative 2 would, therefore, be similar to or less intensive than what was analyzed under the proposed project. As shown in Chapter 3.2*, Air Quality*, Tables 3.2-3 and 3.2-6, construction-related daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) and attainment criteria pollutants (CO, Sox, and PM2.5) would be below SCAQMD significance thresholds. Using the proposed project's emissions analysis as a conservative approach for Alternative 2, since construction equipment would travel on access roads less compared to the proposed project due to not needing to transport spoils, Alternative 2 would result in less emissions than the proposed project. Additionally, similar to the proposed project, construction of Alternative 2 would be located over 1,000 feet away from the nearest sensitive receptor. Risk to sensitive receptors related to toxic air contaminants would be less than significant. Because neither Alternative 2 nor the proposed project would cause a significant environmental impact related to air quality, the level of impact in this regard would be similar.

Biological Resources

Under Alternative 2, the construction and operation of the water trail would be similar to the proposed project, except for the use of an amphibious excavator for removal of the in-channel occlusions. While the use of this construction method would result in a reduction of travel along access routes, the amphibious excavator would require an approximately 40-foot wide work area in addition to the impact acreages under the proposed project. Thus, Alternative 2 would increase the temporary construction footprint along the channel compared to the proposed project. However, spoils would be placed within the 40-foot wide work area, instead of the separate spoils locations identified for the proposed project, which would reduce the amount of temporarily impacted areas on other portions of the study area.

Special Status Species

Alternative 2 would permanently impact 3.8 acres of natural communities (including 0.1 acre of black willow woodland, 3.1 acres of hardstem bulrush marsh, 0.1 acre of saltmarsh bulrush marsh, 0.4 acre of saltgrass flats, and 0.1 acre of allscale scrub) and temporarily impact 37.0 acres of natural communities (including 1.0 acre of black willow woodland, 0.2 acre of sandbar willow woodland, 19.4 acres of hardstem bulrush marsh, 0.3 acre of common reed marsh, 12.1 acres of

saltmarsh bulrush marsh, 4.9 acres of saltgrass flats, 0.5 acre of rubber rabbitbrush scrub – Nevada saltbush scrub, 0.3 acre of rubber rabbitbrush scrub – saltgrass flats, and 3.6 acres of allscale scrub).[7]

If special-status plant species are present within the project site, temporary impacts from trampling could be significant if these impacts threaten regional populations of these species. As with the project, implementation of mitigation would reduce impacts to a less than significant level.

For special-status wildlife species, with the available 616.5 acres of natural areas (i.e., 636.1 acres of avoided areas, minus 19.6 acres of disturbed) within the 685.2-acre study area that would be avoided by Alternative 2, as well as natural areas within the surrounding vicinity, potential impacts to habitat for these species are not expected to threaten regional populations. Thus, any potential direct impacts to special-status species are considered less than significant. However, if construction and maintenance work cannot be scheduled outside of nesting season, impacts to nesting special-status bird species, would be potentially significant. As with the proposed project, mitigation measures would be required for Alternative 2 to reduce the impacts to nesting birds to a less than significant level.

Riparian Habitat or Sensitive Natural Communities

In regards to sensitive natural communities, permanent impacts would occur to 0.1 acre and temporary impacts to 1.0 acre of black willow woodland. Impacts to sensitive natural communities would be potentially significant. Similar to the proposed project, mitigation measures would be required for Alternative 2 to reduce the impacts to a less than significant level.

Alternative 2 would permanently impact 5.7 acres of potential CDFW jurisdictional streambed and associated riparian habitat, of which 5.2 acres would be turned into open water from in-channel occlusion removal, the same as for the proposed project, and would therefore still be CDFW jurisdictional streambed. Alternative 2 would temporarily impact 49.1 acres of potential CDFW jurisdictional streambed and associated riparian habitat. Due to the management benefits of removing common and widely distributed tules within the LORP area, CDFW does not consider removal of occlusions as significant, and no mitigation is warranted (Banks and Moyer 2019). However, any potential impacts to CDFW jurisdictional streambed and associated riparian habitat would be significant. Similar to the proposed project, mitigation measures would be required for Alternative 2 to reduce the impacts to a less than significant level.

Jurisdictional Wetlands

Use of an amphibious excavator for construction with an approximately 40-foot wide work area, would cause greater temporary impacts under Alternative 2 compared to the project. Alternative 2 would permanently impact 3.7 acres of potential USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S.", of which 3.2 acres of USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S." would be turned into open water from in-channel

[7] The Biological Resources Technical Report, which is on file at Inyo County Water Department, contains a detailed analysis of Alternative 2.

occlusion removal and would therefore still be under USACE/RWQCB jurisdiction (i.e., changed from jurisdictional wetland to jurisdictional "waters of the U.S."). Alternative 2 would also temporarily impact 37.9 acres of potential USACE/RWQCB wetlands and 10.4 acres of USACE/RWQCB "waters of the U.S.". Potential impacts to USACE/RWQCB jurisdictional wetlands and "waters of the U.S." would be significant under this alternative. Similar to the proposed project, mitigation measures would be required for Alternative 2 to reduce the impacts to a less than significant level.

Wildlife Movement

Under Alternative 2, temporary impacts would be greater compared to the project. Alternative 2 would result in permanent impacts to approximately 3.8 acres and temporary impacts to approximately 37.0 acres of natural communities. Like to proposed project, the limited footprint of the boat launch and take-out facilities would be traversable by wildlife, and the habitat adjacent to the 15-foot-wide water trail would continue to provide resources for foraging and cover to wildlife. Impacts would include temporarily crushed vegetation for a short duration where excavation would occur. Thus, it is expected that any crushed vegetation would reestablish and regrow naturally. Therefore, temporary impacts are expected to passively recover and reestablish naturally to pre-project conditions, and direct impacts to regional wildlife movement are less than significant. Similar to the proposed project, turbidity associated with construction and maintenance could have a potentially significant impact on the movement of common fish species and their spawning sites. In addition, increased human activity could have a potentially significant indirect impact on the use of the wildlife corridor, impacting songbird and/or raptor nests and elk nursery sites. Similar to the proposed project, mitigation would be required for Alternative 2 to reduce the impacts to a less than significant level.

Comparison to the Proposed Project

The use of the amphibious excavator would potentially cause additional temporary impacts to special-status species, sensitive natural communities, riparian habitat, wetlands, and "waters of the U.S.". Similar to the proposed project, Alternative 2 would require mitigation measures to reduce these impacts to a less than significant level. While impacts would be greater in overall area to biological resources under this alternative compared to the proposed project, Alternative 2 would not require the equipment travel from the river to the spoils areas. In addition, the use of the amphibious excavator has a lower ground pressure than standard heavy equipment and would therefore result in less compaction and potentially less damage to vegetation from a single pass using equipment with a lighter footprint, as compared to heavier equipment taking multiple trips that may cause greater impacts by ripping up the vegetation underneath. In addition, since the equipment would proceed along the river until the end of the work day, it would not need to traverse other areas of the study area thereby limiting the overall extent of area disturbed. Therefore, although the additional area of temporary impacts along the river bank for access would be greater than the proposed project, temporary impacts associated with the ground disturbance, number of trips, and access via other areas would be reduced with use of this equipment. Because both Alternative 2 and the proposed project would cause a significant environmental impact to biological resources requiring the implementation of mitigation measures, the level of impact would be similar.

Cultural Resources

Alternative 2 would be similar to the proposed project, except for the use of an amphibious excavator during construction of the water trail for the removal of in-channel occlusions. Alternative 2's construction footprint is located within the cultural resource area of potential effect (APE) analyzed under the proposed project. Similar to the proposed project, Alternative 2 would use existing access roads, which would not result in significant impacts to archeological or historic sites if all proposed project-related vehicles and equipment stay within the existing roadways. Under Alternative 2, construction equipment would travel on access roads less compared to the proposed project due to not needing to transport spoils to placement areas, resulting in a smaller potential to impact off-road resources. Similar to the proposed project, occlusion removal would occur within the existing Owens River channel and the likelihood for encountering intact archaeological deposits in such a dynamic fluvial environment is relatively low. The stockpiling and spreading of soils would not require any excavation and would have no potential to impact sub-surface archaeological deposits. Nevertheless, similar to the proposed project, ground disturbing activities associated with the in-channel work and construction of the boat launch facilities under Alternative 2 would have the potential to significantly impact unknown sub-surface archaeological deposits that have the potential to qualify as historic properties pursuant to Section 106 of the NHPA and historical resources pursuant to CEQA. Similar to the proposed project, Alternative 2 would require mitigation measures to reduce these impacts to less than significant. Because both Alternative 2 and the proposed project would cause a significant environmental impact related to cultural resources requiring mitigation, the level of impact would be similar.

Geology and Soils

Under Alternative 2, the construction and operation of the water trail would be similar to the proposed project, except for the use of an amphibious excavator for removal of the in-channel occlusions. Under Alternative 2, spoils would be placed adjacent to the river rather than being transported to the stockpile locations identified for the project. Spoils would be placed a minimum of 15 feet from the edge of water in order to utilize existing vegetation as filter strips to minimize movement of sediments. Placed spoils would be contoured to smoothly conform to adjacent existing grade. Similar to the proposed project, because disturbance within and adjacent to the river channel would be greater than one acre, channel widening and vegetation clearing activities would require compliance with NPDES Construction General Permit criteria, including implementation of a SWPPP. The SWPPP would detail various BMPs that would be implemented during construction to control erosion, reduce sedimentation and the transport of soils, and ensure that the channel's water quality is not degraded. Nevertheless, removing vegetation and sediment from the river would disturb bottom sediments, and could result in a substantial temporary increase in sediment and organics loading to the river. Similar to the proposed project, mitigation would be required for Alternative 2 to minimize sediment loading during construction. With regard to paleontological resources, as with the project, Alternative 2 has the potential to directly or indirectly destroy a unique paleontological resource. However, as with the project, Alternative 2 would result in a less than significant impact related to geology and soils with the incorporation of mitigation measures. Therefore, impacts under Alternative 2 would be similar to the project.

Greenhouse Gas Emissions

Alternative 2 would alter the proposed project's construction method by using an amphibious excavator along the river bank to remove occlusions and emergent vegetation in a single step and the contractor may opt to have one or more pieces of machinery operating concurrently to reduce the overall construction time for Alternative 2. GHG emissions are cumulative over the extent of the project and not related to a daily threshold. Therefore, GHG emissions for one amphibious excavator operating for 260 days would be the same as two amphibious excavators operating for 130 days. The GHG analysis for the proposed project analyzed emissions for construction of the water trail assuming the use of both in-channel and land-based equipment concurrently and assumes an amphibious excavator, a tracked excavator, am amphibious vegetation cutter, as well as a Morooka MST and skid steer loader for transport to and placement of vegetation in separate spoils areas. GHG emissions from all of this equipment operating over an extended schedule is anticipated to be greater than the operation of two or three amphibious excavators for a truncated schedule. As shown in Section 3.6*, Greenhouse Gas Emissions*, Table 3.6-3, construction-related daily emissions would be approximately 622 $MTCO_2e$ over the entire project. Using the proposed project's emissions analysis as a conservative approach for Alternative 2, less construction equipment would be used compared to the proposed project due to not needing to transport spoils. Therefore, Alternative 2 would result in less emissions than the proposed project, even assuming two or more amphibious excavators. Additionally, as with the project, Alternative 2 would be consistent with all applicable regulatory plans and policies for reducing GHG, and may even be more conservative than the proposed project due to the reduced amount of equipment being used and a potentially shortened construction schedule. Because neither Alternative 2 nor the proposed project would cause a significant environmental impact related to GHG emissions, the level of impact would be similar.

Hydrology and Water Quality

Under Alternative 2, the construction and operation of the water trail would be similar to the proposed project, except for the use of an amphibious excavator for removal of the in-channel occlusions. Similar to the proposed project, in-channel activities would disturb bottom sediments, and could result in a substantial temporary increase in sediment and organics loading to the river, which could in turn cause temporary water quality degradation downstream. Release of substantial amounts of dissolved organic material from sediments could contribute to low dissolved oxygen concentration downstream. Similar to the proposed project, mitigation measures would be required to minimize impacts related to the release of turbidity, organic-laden sediment, and other pollutants in the waterway.

As with the proposed project, construction of Alternative 2 would alter drainage patterns within the project area. Under Alternative 2, spoils would be placed adjacent to the river rather than being transported to the stockpile locations identified for the project. Spoils would be placed a minimum of 15 feet from the edge of water in order to utilize existing vegetation as filter strips to minimize movement of sediments. Placed spoils would be contoured to smoothly conform to adjacent existing grade and to minimize disturbance of existing flow paths. Nevertheless, similar to the proposed project, mitigation measures would be required to implement specific best management practices to minimize erosion of spoils.

Alternative 2 would have a shorter construction period compared to the proposed project, and thus the period of increased turbidity as a result of excavation would be reduced. Nevertheless, because both Alternative 2 and the proposed project would cause a significant environmental impact related to hydrology requiring mitigation measures, the level of impact in this regard would be similar.

Land Use Planning

Under Alternative 2, the construction and operation of the ORWT would be similar to the proposed project, except for the use of an amphibious excavator for removal of the in-channel occlusions. The construction methodology of Alternative 2 would have no change in land use and planning compared to the proposed project. Similar to the proposed project, Alternative 2 would not result in a significant environmental impact due to a conflict with the County's General Plan and County Code, the County and LADWP's LORP, and the County's Recreational Use Plan. Because neither Alternative 2 nor the proposed project would cause a significant environmental impact related to land use and planning, the level of impact would be the same.

Recreation

Alternative 2 would be the same as the proposed project, except for the use of an amphibious excavator during construction of the water trail for the removal of in-channel occlusions. Alternative 2 would have no change in recreational resources compared to the proposed project. As with the project, during operation Alternative 2 could result in an increased indirect demand on surrounding recreational areas. However, it is reasonable to assume that this increased demand would not substantially deteriorate regional park facilities. As with the project, Alternative 2 would meet the County's General Plan policies by providing additional recreational opportunities to the region that would be designed to accommodate populations with special needs, and also by increasing the County's capacity to serve tourists. In addition, the Lower Owens River Recreation Use Plan specifically supports improving river access and water-based recreation. Impacts regarding recreation would be the same under Alternative 2 as the project since the construction method does not contribute to potential recreation impacts.

Tribal Cultural Resources

Alternative 2 would be similar to the proposed project, except for the use of an amphibious excavator during construction of the water trail for the removal of in-channel occlusions. Alternative 2's construction footprint is similar to the proposed project. No tribal cultural resources have been identified within or the vicinity of the proposed project area as a result of the County's AB 52 consultation efforts or the Sacred Lands File search. Because neither Alternative 2 nor the proposed project would cause a significant environmental impact related to tribal cultural resources, the level of impact in this regard would be similar.

Relationship of the Alternative to the Project Objectives

As discussed above Alternative 2 would result in the development of a water trail for non-motorized watercraft. Alternative 2 would use an amphibious excavator for removal of the in-channel occlusions, which is a specialized piece of equipment designed to work in these ecosystems. Under Alternative 2, the overall timeframe for construction of the water trail would

be reduced since the clearing and removal of vegetation would occur with one pass through the channel. In addition, the area in which the equipment activity would occur would be reduced since the spoils areas would not be used. In addition, the lower ground pressure of the amphibious equipment would result in less soil compaction. The reduction in overall use of equipment would result in less air and greenhouse gas emissions compared with the project.

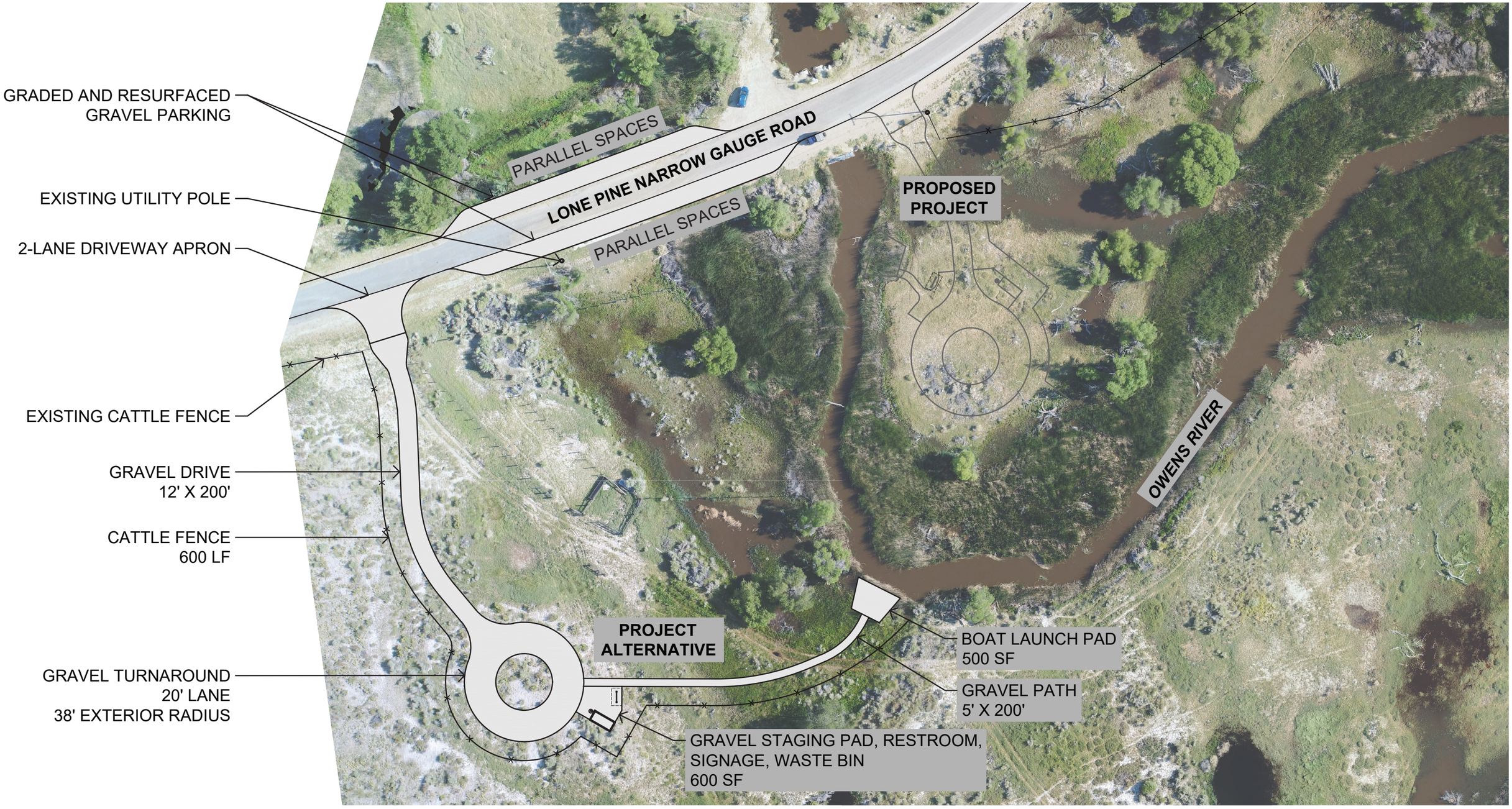
Alternative 2 would meet all project objectives detailed above in Section 4.2. As with the proposed project, Alternative 2 would provide all-abilities access to the water trail as a recreational resource and would provide recreational and educational opportunities for the surrounding community and visitors. While the different construction method would result in greater acreage impacts to biological resources, the equipment has a lower ground pressure than standard equipment and would result in less compaction. Restoration activities under Alternative 2 for the natural habitats and species of the Owens River would return temporarily impacted areas to pre-project conditions. In addition, Alternative 2 would meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan. Therefore, all objectives of the proposed project would be met by this alternative.

4.6.3 Alternative 3: Alternative Location of Put-In Facility

Description of the Alternative

Alternative 3, or the Alternative Location of Put-In Facility, would consist of the same design components and construction, operation, and maintenance activities as the proposed project, with the exception that the boat put-in facility would be located on the western river bank adjacent to Lone Pine Gauge Road, as shown in **Figure 4-1**, *Alternative Location of Boat Launch Facility.* As shown in Figure 4-1, development of Alternative 3 would place the boat put-in facility further away from the river channel. The majority of the facility would be placed outside of the existing riparian habitat along the river channel.

The overall design of the boat put-in facility would be similar to the proposed project with the necessary changes to allow for water entry from the western river bank. Specifically, access to the boat put-in facility from Highway 395 would be provided via Lone Pine Narrow Gauge Road, which would connect to a short single-lane driveway apron and cattle guard that transitions to a all-weather surface drive and turnaround as shown in Figure 4-1. The gravel drive would be approximately 12 feet wide by 200 feet long, and the gravel turnaround would provide a 38-foot exterior radius, which would accommodate an 8-passenger van towing an 8 kayak/canoe trailer. A gravel staging area would be located on the southeastern portion of the turnaround which would connect to the boat launch via a pedestrian path. The path leading down to the boat launch would be five feet wide and 200 feet long and would also be accessible for wheelchairs, with a maximum longitudinal slope of five percent and a maximum cross slope of two percent. The boat launch pad, which would be adjacent to the river, would consist of a dock or similar appurtenance to allow all-abilities loading and unloading of watercraft.



BACKGROUND AERIAL SOURCE: INYO COUNTY
INUNDATION: 190 CFS ON JULY 7, 2017; ESRI

Owens River Water Trail

Figure 4-1
Alternative Location of Boat Launch Facility

ESA

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Similar to the project, parallel parking would be provided along the Lone Pine Narrow Gauge Road shoulder at the top of the boat put-in facility. In addition, a prefabricated contained vault restroom would be installed as well as wildlife resistant trash receptacles, and weather-resistant interpretative and safety sign kiosk. Fencing would be installed around the western perimeter of the amenities to separate the boat launch facility from the existing, surrounding grazing activities.

Because there is no difference between Alternative 3 and the proposed project in how the water trail and the boat take-out facility would be implemented, the following analyses focus on the difference in environmental impacts between the boat put-in facility under the project as proposed and this alternative. However, the overall comparisons and conclusions consider the whole of the project and Alternative 3.

Environmental Impacts

Aesthetics

Alternative 3 would largely be similar to the proposed project, except for the location of the put-in facility. Similar to the proposed project, the put-in facility would be visible from the adjacent portions of Lone Pine Narrow Gauge Road. While motorists on this roadway would be able to view the construction of the put-in facility, views would last for a brief period of time and construction equipment would be temporary. Similar to the proposed project, once construction is completed at the put-in facility, construction equipment would be removed and all disturbed areas outside the facility's footprint would be restored to its existing condition and seeded with upland species native to the area. The put-in facility would be visible from Lone Pine Narrow Gauge Road. However, similar to the proposed project, the facility would not detract from the surrounding scenic vistas as it would only be visible from limited areas and for a short duration for people traveling on the roadway. Furthermore, the facility would be at a lower elevation relative to the surrounding area, which would minimize its visual presence in the long-range views of the surrounding scenic vistas. Because neither Alternative 3 nor the proposed project would cause a significant environmental impact related to aesthetics, the level of impact would be similar.

Air Quality

Alternative 3 would alter the location of the proposed project's put-in facility, with all other aspects of the project's construction and operation remaining the same. Alternative 3 would use similar construction equipment associated with the put-in facility as the proposed project, and thus would create similar emissions. Similar to the proposed project, Alternative 3's construction-related daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) would be below significance thresholds. Additionally, attainment criteria pollutants (CO, Sox, and PM2.5) would be below significance thresholds. Similar to the proposed project, construction of Alternative 3 would be located over 1,000 feet away from the nearest sensitive receptor. Risk to sensitive receptors related to toxic air contaminants would be less than significant. Because neither Alternative 3 nor the proposed project would cause a significant environmental impact related to air quality, air quality impacts would be similar.

Biological Resources

Special Status Species

Alternative 3 would be similar to the proposed project except with the boat launch at a slightly different location to the west. Alternative 3 would permanently impact 3.8 acres of natural communities (including 0.1 acre of black willow thicket, 3.1 acres of hardstem bulrush marsh, 0.1 acre of saltmarsh bulrush marsh, 0.3 acre of saltgrass flats, 0.1 acre of rubber rabbitbrush scrub – saltgrass flats, and 0.1 acre of allscale scrub). Alternative 3 would temporarily impact 37.0 acres of natural communities (including 0.6 acre of black willow thicket, 0.1 acre of sandbar willow thicket, 10.1 acres of hardstem bulrush marsh, 0.2 acre of common reed marsh, 14.7 acres of saltmarsh bulrush marsh, 6.6 acre of saltgrass flats, 0.5 acre of rubber rabbitbrush scrub – Nevada saltbush scrub, 0.3 acre of rubber rabbitbrush scrub – saltgrass flats, and 3.9 acres of allscale scrub). As a comparison, the proposed project would also permanently impact 3.8 acres and temporarily impact 37.0 acres.[8]

If special-status plant species are present within the project site, temporary impacts from trampling could be significant if these impacts threaten regional populations of these species. As with the project, implementation of mitigation would reduce impacts to a less than significant level.

For special-status wildlife species, with the available 621.8 acres of natural areas (i.e., 641.4 acres of avoided areas, minus 19.6 acres of disturbed) within the 685.2-acre study area that will be avoided by Alternative 3, as well as natural areas within the surrounding vicinity, potential impacts to habitat for these species are not expected to threaten regional populations. Thus, any potential direct impacts to special-status species are considered less than significant. However, if construction and maintenance work cannot be scheduled outside of nesting season, impacts to nesting special-status bird species would be potentially significant. Similar to the proposed project, mitigation measures would be required for Alternative 3 to reduce impacts to nesting birds to a less than significant level.

Riparian Habitat or Sensitive Natural Communities

In regards to sensitive natural communities, Alternative 3 would permanently impact the same 3.3 acres of sensitive natural communities as the proposed project (including 0.1 acre of black willow thicket, 3.1 acres of hardstem bulrush marsh, and 0.1 acre of saltmarsh bulrush marsh) and temporarily impact 25.9 acres of natural communities (which is the same as the proposed project) (including 0.6 acre of black willow thicket, 10.1 acres of hardstem bulrush marsh, 14.7 acres of saltmarsh bulrush marsh, and 0.5 acre of rubber rabbitbrush scrub – Nevada saltbush scrub). Impacts to sensitive natural communities would be significant, similar to the proposed project. However, it should be noted that CDFW would not consider the removal of hardstem bulrush marsh from the Lower Owens River to be a substantially adverse impact, and would not require mitigation, based on coordination with CDFW (Buckmaster 2019b).

[8] The Biological Resources Technical Report, which is on file at Inyo County Water Department, contains a detailed analysis of Alternative 3.

Alternative 3 would permanently impact 5.7 acres of potential CDFW jurisdictional streambed and associated riparian habitat, of which 5.2 acres would be turned into open water from in-channel occlusion removal, the same as for the proposed project, and would therefore, still be CDFW jurisdictional streambed, and temporarily impact 35.7 acres of potential CDFW jurisdictional streambed and associated riparian habitat (compared to 35.5 acres under the proposed project). Any potential impacts to CDFW jurisdictional streambed and associated riparian habitat would be significant. Similar to the proposed project, mitigation measures would be required for Alternative 3 to reduce impacts to a less than significant level.

Jurisdictional Wetlands

Alternative 3 would permanently impact 3.5 acres of potential USACE/RWQCB wetlands (compared to 3.6 acres under the proposed project) and 2.0 acres of USACE/RWQCB "waters of the U.S." (similar to the proposed project), of which 3.2 acres of USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S." would be turned into open water from in-channel occlusion removal and would therefore still be under USACE/RWQCB jurisdiction (i.e., changed from jurisdictional wetland to jurisdictional "waters of the U.S."). Alternative 3 would also temporarily impact 32.4 acres of potential USACE/RWQCB wetlands (compared to 32.3 acres under the proposed project) and 2.5 acres of USACE/RWQCB "waters of the U.S." (similar to the proposed project). Potential impacts to USACE/RWQCB jurisdictional wetlands and "waters of the U.S." would be significant requiring mitigation, similar to the proposed project.

Wildlife Movement and Nursery Sites

Under Alternative 3, permanent impacts would occur to approximately 3.8 acres of natural communities (which is the same as the proposed project). The limited footprint of the boat launch and take-out facilities would be traversable by wildlife, and the habitat adjacent to the 15-foot-wide water trail would continue to provide resources for foraging and cover to wildlife. As with the proposed project, turbidity associated with project construction and maintenance could have a potentially significant impact on movement of common fish species and their spawning sites. In addition, if nesting season cannot be avoided, potential impacts to songbird and/or raptor nests and elk nursery sites would occur. Similar to the proposed project, mitigation measures would be required for Alternative 3 to reduce impacts to a less than significant level.

Comparison to the Proposed Project

The change in location of the put-in facility would result in similar potential impacts to special-status species, sensitive natural communities, riparian habitat, wetlands, and "waters of the U.S." as the proposed project. Alternative 3, like the proposed project, would require mitigation measures to reduce these impacts to less than significant. Because both Alternative 3 and the proposed project would cause a significant environmental impact related to biological resources requiring mitigation, the level of impact would be similar.

Cultural Resources

Alternative 3's construction footprint of the put-in facility is located within the cultural resource APE defined for the project. Similar to the proposed project, ground disturbing activities associated with Alternative 3 would have the potential to significantly impact unknown sub-surface archaeological deposits that have the potential to qualify as historic properties pursuant to

Section 106 of the NHPA and historical resources pursuant to CEQA. Similar to the proposed project, Alternative 3 would require mitigation measures to reduce these impacts to less than significant. Because both Alternative 3 and the proposed project would cause a significant environmental impact related to cultural resources requiring mitigation, the level of impact would be similar.

Geology and Soils

Under Alternative 3, construction and operation would be similar to the proposed project, except for the location of the put-in facility. Similar to the proposed project, installation of the put-in facility would be required to comply with CBC and NPDES regulations and would adhere to standard engineering and construction practices, including practices to address liquefaction, erosion, and the loss of topsoil. Similar to the project, access areas to the put-in facility under Alternative 3would be covered in gravel or another all-weather surface, which would reduce erosion potential, thereby minimizing the potential for transfer of sediment into the waterway. Under Alternative 3, in-channel improvements would occur similar to the proposed project, and therefore mitigation measures would be required due to in-stream sedimentation and erosion during construction and maintenance work. With regard to paleontological resources, as with the project, Alternative 3 would have the potential to directly or indirectly destroy a unique paleontological resource. However, as with the project, Alternative 3 would result in a less than significant impact related to geology and soils with the incorporation of mitigation measures. Therefore, impacts under Alternative 3 would be similar to the project.

Greenhouse Gas Emissions

Alternative 3 would alter the location of the proposed project's put-in facility, with all other aspects of the project's construction and operation remaining the same. Alternative 3 would use similar construction equipment as the proposed project, and thus would create similar GHG emissions. Similar to the project, Alternative 3 would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. Therefore, GHG impacts under Alternative 3 would be similar to project impacts.

Hydrology and Water Quality

Alternative 3 would alter the location of the proposed project's put-in facility, with all other aspects of the project's construction and operation remaining the same. The change in location of the put-in facility would not result in changes to the analysis conducted for the project. The potential impacts would remain the same. As with the project, with the incorporation of mitigation measures potentially significant hydrology and water quality impacts under Alternative 3 would be reduced to a less-than-significant level.

Land Use and Planning

The change in the location of the put-in facility under Alternative 3 would not change the land use and planning analysis or conclusions reached for the project. Similar to the project, Alternative 3 would not result in a significant environmental impact due to a conflict with the County's General Plan and County Code, the County and LADWP's LORP, and the County's Recreational Use Plan. In addition, both the proposed project and Alternative 3 would not be

subject to the provisions of LADWP's HCP. Because neither Alternative 3 nor the project would result in a significant environmental impact related to land use and planning, impacts would be similar.

Recreation

The alternative location of the put-in facility under Alternative 3 would have no change in recreational resources compared to the project. Similar to the project, while Alternative 3 could result in an increased indirect demand on surrounding recreational areas, it is reasonable to assume that this increased demand would not substantially deteriorate regional park facilities. As with the project, Alternative 3 would result in the development of a water trail for non-motorized watercraft. Therefore, as with the project, Alternative 3 would meet the County's General Plan policies by providing additional recreational opportunities in the region that would be designed to accommodate populations with special needs, and also by increasing the County's capacity to serve tourists. In addition, the Lower Owens River Recreation Use Plan specifically supports improving river access and water-based recreation. Impacts regarding recreation would be the same under Alternative 3 as the project since the location of the put-in facility does not contribute to potential recreation impacts.

Tribal Cultural Resources

Alternative 3 would largely be similar to the proposed project, except for the location of the put-in facility. No tribal cultural resources have been identified within or in the vicinity of the project area as a result of the County's AB 52 consultation efforts or the Sacred Lands File search. Because neither Alternative 3 nor the project would cause a significant environmental impact related to tribal cultural resources, their level of impact in this regard would be similar.

Relationship of the Alternative to the Project Objectives

Under Alternative 3, the construction and operation of the water trail would be similar to the project, except for the location of the put-in facility. Alternative 3 would meet all project objectives detailed above in Section 4.2. As with the project, Alternative 3 would provide all-abilities access to the Owens River as a recreational resource and would provide recreational and educational opportunities for the surrounding community and visitors. Restoration activities for the natural habitats and species of the Owens River would be consistent with the restoration efforts of the LORP. Additionally, Alternative 3 would meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan. Therefore, all objectives of the project would be met by this alternative.

4.6.4 Alternative 4: Off-Site Disposal of Materials Alternative

Description of the Alternative

Alternative 4 would consist of the same design components and construction, operation, and maintenance activities as the proposed project, with the exception that the spoils materials from the construction of the water trail would be piled to allow for deflation due to dewatering and drying at the identified spoils areas and then hauled off-site to the Lone Pine Landfill. The landfill is located on the west side of the river approximately two (2) miles from the project area. Under

Alternative 4, the materials removed from the channel would be collected and placed in the identified areas for a temporary time to allow for dewatering. The material would be distributed in as thin layers as possible to facilitate the drying process. It is anticipated that the hauling of the material would not begin until the materials dewatered so as to reduce the mass and weight and that there was a sufficient amount ready to efficiently haul several loads within an established timeframe. Once dry, the material would be loaded in to haul trucks and transferred to the Lone Pine Landfill.

The Lone Pine Landfill accepts industrial waste, mixed municipal waste, agricultural waste, construction/demolition waste, etc. Bethnic samples of the material to be removed from the river channel have been analyzed and found to be non-hazardous. The material would be used as alternative daily cover at the Lone Pine Landfill, and as such would not affect the landfill capacity.[9] The hauling of material would be staged with the landfill operator to ensure an appropriate flow and storage of material. Upon reaching the landfill, the material would be placed so that the landfill operator could use the material as needed.

As indicated above, the materials would be removed from the channel and placed in the spoils areas to dewater and dry out. Once deflated, the materials would be loaded onto appropriate trucks by tracked excavator with thumb, and hauled off-site to the landfill. The material would be removed from the floodplain in two or three steps depending on the location of the spoils area (i.e., west or east side of the river).

The two step process would occur for spoils areas located on the west side of the river. The first step is the removal of vegetation and excavation and placement in the spoils areas. After dewatering and drying, the material would be loaded by the tracked excavator with thumb into a 10 cubic yard tracked dump-truck, such as a Marooka. Using the low ground pressure tracked dump truck would allow the material to be removed from the relatively inaccessible west side floodplain. The tracked dump truck would transport the material on the informal roads to the landfill. The tracked amphibious haul truck would make approximately 313 one-way trips to transport the material to the landfill.

Transporting material from the spoils areas on the east side of the river would require an additional step (i.e., the three step process) and the use of paved County and State roads. The east side of the river has minimal and sometimes seasonally wet roads. As with the project, vegetation and excavated material would be placed in the spoils areas. After dewatering and drying, the material would be loaded by the tracked excavator into a tracked dump truck, which would then transport the materials over sometimes wet roads to a temporary transfer area, which would be located in an upland area. The tracked amphibious haul truck would make approximately 363 one-way trips to transport the material to the transfer area. The material would be piled and consolidated in the transfer area. The tracked dump truck is not designed to be driven over County or State roads and highways. Therefore, the third step would entail reloading the material

[9] Based on personal communication between Fred Aubry, Inyo County, Waste Management Superintendent and Richard Stone, Team Engineering & Management, Inc., on February 27, 2019, the facility could accept up to approximately 11,000 cy of mixed material from then channel excavation and vegetation for use as alternative daily cover. If materials were disposed of in the landfill, the Lone Pine Landfill is estimated to have sufficient capacity through the year 2052.

from the upland area by tracked excavator with thumb into highway dump trucks. The dump trucks, which would have an 18 cy capacity, would travel on the informal roads to access either Lone Pine Narrow Gauge Road or State Route 136 and then would travel to Substation Road, which leads to the landfill. Approximately 183 one-way trips (366 round trips) would be made to transport the material to the landfill. The distance that a haul truck would travel from the transfer area to the landfill would vary from about 4.5 miles from Lone Pine Narrow Gauge Road to about 6.4 miles from State Route 136.

As with the project, after completion of the construction of the water trail, the contractor would rip, disk, or grade all areas of ground disturbance. In order to restore floodplain soils compacted by construction traffic, and to prevent undesired vehicular incursions into the floodplain by the public, the temporary floodplain access roads would be treated in a manner that stabilizes, restores, and camouflages the route to prevent future use. Compacted soils would be ripped, graded, or disked, and returned to their pre-construction condition.

As with the project, ongoing maintenance of the facility would occur, including trash collection and removal, servicing of vault toiles, maintaining signage, and repairs to access roads and parking areas as needed. In addition, maintenance of the channel would occur to maintain the integrity of the water trail. Maintenance of the channel would be limited to the harvest of shoots, stalk, and leaves and would not include any excavation of the channel bed. The emergent vegetation removed during annual maintenance would be spread thinly to a depth no greater than 6 inches in areas at least 15 feet from the water edge and above the 200-cfs inundation zone, which are characterized by saltgrass and without mesic vegetation.

Aesthetics

Alternative 4 would be generally be the same as the proposed project, except for the method of disposing of the emergent vegetation and excavated materials from the project area during construction of the water trail. Under this alternative, excavated material from the river channel and the emergent vegetation removed above the surface water elevation would be stockpiled in the spoils areas to dewater and dry out before being hauled offsite to the Lone Pine Landfill. Materials would be located in the spoils areas for a shorter time under Alternative 4 compared to the project. However, Alternative 4 would require haul trucks to transport the materials to the Lone Pine Landfill. The material would be removed from the floodplain in two or three steps depending on the location of the spoils area (i.e., west or east side of the river). Alternative 4 would result in more hauling activity as well as activity within a larger area compared with the project. In addition, the activity would be more visible as it would occur closer to roads near the floodplain. While under Alternative 4 the area would be restored to pre-construction conditions, the overall amount of disturbance would be greater compared to the project. However, the activity would be temporary in nature and therefore, as with the project, Alternative 4 would not result in a significant visual effect in the project area. Although a broader area would be affected, aesthetic impacts under Alternative 4 would be similar to the project.

Air Quality

Alternative 4 would keep all aspects of the project's construction and operation generally the same except, once the spoils are dewatered, the material would be transported offsite to the Lone Pine Landfill. In addition to the equipment used for the project, Alternative 4 is anticipated to require an additional Mooroka MST, skid steer loader, and two workers for transport of materials from the west side spoil areas and two Mooroka MSTs, two skid steer loaders, and 4 workers for transport of materials from the east side spoil areas. Emissions of all criteria pollutants would increase over the project depending on the level of activity that would occur on any given day. Assuming the dewatered materials from the north are moved in conjunction with the river clearing in the south, emissions are anticipated to be between 4 percent and 96 percent greater than the project emissions as shown in Table 4-2. Similar to the proposed project, Alternative 4's construction-related daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) would be below significance thresholds. Additionally, attainment criteria pollutants (CO, Sox, and PM2.5) would be below significance thresholds. As with the project, construction of the water trail under Alternative 4 would be located over 1,000 feet away from the nearest sensitive receptor. Risk to sensitive receptors related to toxic air contaminants would be less than significant. While neither Alternative 4 nor the proposed project would cause a significant environmental impact related to air quality, air quality impacts from Alternative 4 would be greater than the proposed project as a result of the haul trucks and the removal of the material.

TABLE 4-2
MAXIMUM ALTERNATIVE 4 REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)[a]

Source	VOC	NOx	CO	SOX	PM10	PM2.5
West Side	1	4	5	<1	1	<1
East Side	2	10	12	<1	3	2
Max Project	6	36	53	<1	12	6
Total Minimum Emissions	6	40	58	<1	13	6
Percent Increase over Project	10%	10%	9%	13%	4%	4%
Total Maximum Emissions	10	50	71	2	16	9
Percent Increase over Project	41%	28%	25%	96%	23%	32%
Maximum Daily Emissions[b]	**10**	**50**	**71**	**2**	**16**	**9**
Thresholds	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Combined rows account for overlapping emissions from the listed activities. Detailed emissions calculations are provided in Appendix D.

[b] Analysis accounted for emissions from overlapping phases.

Source: ESA, 2019

From an operational standpoint, Alternative 4 would be the same as the project. Therefore, as with the project, operational-related daily emissions for the non-attainment criteria and precursor pollutants (VOC, NOx, and PM10) under Alternative 4 would be below significance thresholds. In addition, attainment criteria pollutants (CO, Sox, and PM2.5) would be below significance

thresholds. As with the project, Alternative 4 would result in a less than significant impact relative to risk to sensitive receptors related to toxic air contaminants and CO.

Biological Resources

Special Status Species

Alternative 4 would be similar to the proposed project except that the temporary impacts associated with the spoils areas would be reduced since the duration that the material would be on-site would be shortened. Impacts would be the same in quantity as the proposed project; however, the spoils materials would be piled to allow for deflation due to dewatering and drying at the identified spoils areas and then hauled off-site to the Lone Pine Landfill, which would reduce the temporary impacts to vegetation communities on which the spoils are placed.

If special-status plant species are present within the project site, temporary impacts from trampling could be significant if these impacts threaten regional populations of these species. As with the project, implementation of mitigation would reduce impacts to a less than significant level.

For special-status wildlife species, with the available 621.8 acres of natural areas (i.e., 641.4 acres of avoided areas, minus 19.6 acres of disturbed) within the 685.2-acre study area that would be avoided by Alternative 4, as well as natural areas within the surrounding vicinity, potential impacts to habitat for these species are not expected to threaten regional populations. Thus, any potential direct impacts to special-status species are considered less than significant. However, if construction and maintenance work cannot be scheduled outside of nesting season, impacts to nesting special-status bird species would be potentially significant. Similar to the proposed project, mitigation measures would be required for Alternative 4 to reduce impacts to nesting birds to a less than significant level.

Riparian Habitat or Sensitive Natural Communities

In regards to sensitive natural communities, Alternative 4 would permanently impact 0.1 acre and temporarily impact 0.6 acre of black willow thicket. Impacts to sensitive natural communities would be significant, similar to the proposed project. Similar to the proposed project, mitigation measures would be required to reduce the impacts to a less than significant level.

Alternative 4 would permanently impact 5.7 acres of potential CDFW jurisdictional streambed and associated riparian habitat, of which 5.2 acres would be turned into open water from in-channel occlusion removal, the same as for the project, and would therefore, still be CDFW jurisdictional streambed, and temporarily impact 35.5 acres of potential CDFW jurisdictional streambed and associated riparian habitat (which is the same as the project). Due to the management benefits of removing common and widely distributed tules within the LORP area, CDFW does not consider removal of occlusions as significant, and no mitigation is warranted (Banks and Moyer 2019). However, any potential impacts to CDFW jurisdictional streambed and associated riparian habitat would be significant. Similar to the proposed project, mitigation measures would be required for Alternative 4 to reduce impacts to a less than significant level.

Jurisdictional Wetlands

Alternative 4 would permanently impact 3.7 acres of potential USACE/RWQCB wetlands (which is the same as the proposed project) and 2.0 acres of USACE/RWQCB "waters of the U.S." (which is the same as the proposed project), of which 3.2 acres of USACE/RWQCB wetlands and 2.0 acres of USACE/RWQCB "waters of the U.S." would be turned into open water from in-channel occlusion removal and would therefore still be under USACE/RWQCB jurisdiction (i.e., changed from jurisdictional wetland to jurisdictional "waters of the U.S."). Alternative 4 would also temporarily impact 32.3 acres of USACE/RWQCB wetlands (which is the same as the proposed project) and 2.4 acres of USACE/RWQCB "waters of the U.S." (which is the same as the project). Potential impacts to USACE/RWQCB jurisdictional wetlands and "waters of the U.S." would be significant requiring mitigation, similar to the proposed project.

Wildlife Movement and Nursery Sites

Under Alternative 4, permanent impacts would occur to approximately 3.8 acres of natural communities (which is the same as the project). The limited footprint of the boat launch and take-out facilities would be traversable by wildlife, and the habitat adjacent to the 15-foot-wide water trail would continue to provide resources for foraging and cover to wildlife. As with the proposed project, turbidity associated with project construction and maintenance could have a potentially significant impact on movement of common fish species and their spawning sites. In addition, if nesting season cannot be avoided, potential impacts to songbird and/or raptor nests and elk nursery sites would occur. Similar to the proposed project, mitigation measures would be required for Alternative 4 to reduce impacts to a less than significant level.

Comparison to the Proposed Project

Alternative 4 would result in the same impacts as the proposed project relative to the construction of the water channel itself. However, Alternative 4 would result in an increase in equipment activity to haul the materials from the spoils areas to the Lone Pine Landfill. The increase in activity would result in greater compaction of soils and increase in incisions within the floodplain. The high number of truck trips may also result in greater damage to existing vegetation. While these would be restored to pre-construction conditions, there would be an increase in the need for restoration. The additional effort could result in the potential for the introduction of weeds in the area, which would be similar to the proposed project relative to the construction of the water channel, but greater than the proposed project from the spoils areas through the areas that must be accessed to haul the material off-site.

Cultural Resources

Alternative 4 would be similar to the project, except that materials would be transported offsite for disposal. Alternative 4's construction footprint is located within the cultural resource area of potential effect (APE) analyzed under the proposed project. Similar to the proposed project, Alternative 4 would use existing access roads, which would not result in significant impacts to archeological or historic sites if all proposed project-related vehicles and equipment stay within the existing roadways. Similar to the project, ground disturbing activities associated with the in-channel work and construction of the boat launch facilities under would have the potential to significantly impact unknown sub-surface archaeological deposits that have the potential to qualify as historic properties pursuant to Section 106 of the NHPA and historical resources

pursuant to CEQA. Therefore, as with the project, Alternative 4 would require mitigation measures to reduce these impacts to less than significant. Compared with the project, impacts to cultural resources would be similar under Alternative 4.

Geology and Soils

Under Alternative 4, construction and operation would be similar to the proposed project, except for the hauling of the material in the spoils areas during construction and maintenance of the water trail. The change in method of disposal of the excavated material would not result in changes to the analysis for geology and soils conducted for the project. The potential impacts would remain the same as the proposed project. As with the project, the incorporation of mitigation measures would reduce potentially significant impacts to geology and soils, including paleontological resources, under Alternative 4 to a less-than-significant level.

Greenhouse Gas Emissions

Alternative 4 would keep all aspects of the project's construction and operation generally the same except once the spoils were dewatered the material would be transported offsite to the Lone Pine Landfill. In addition to the equipment used for the project, Alternative 4 is anticipated to require an additional Mooroka MST, skid steer loader, and two workers for transport of materials from the west side spoil piles and two Mooroka MSTs, two skid steer loaders, and 4 workers for transport of materials from the east side spoil piles. Emissions of greenhouse gases would increase over the project depending on the length of time it takes to move the spoils to the landfill. Construction emissions from the added transport of materials would increase GHG emissions over the proposed project by between 6 to 63 MT CO_2e. Amortized, it would increase annual emissions from between less than 1 MT CO_2e to 3 MT CO_2e annually.

With respect to maintenance emissions, emissions from Alternative 4 would be the same as that of the project with maximum maintenance and operational emissions of 409 MT CO_2e annually. Annual emissions from the combined amortized construction and maintenance activities due to the additional transport of materials that would occur under Alternative 4 exceeds the annual emissions of the project by between approximately 1 and 3 MT CO_2e. However, as with the project, Alternative 4 would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions even though GHG emissions would be greater under Alternative 4 compared with the project.

Hydrology and Water Quality

Under Alternative 4, construction and operation would be the same as the project, except for the hauling of the material in the spoils areas during construction of the water trail. The change in the method of disposal of the excavated material would not result in changes to the hydrology and water quality analysis conducted for the project. The potential impacts would remain the same. As with the project, with the incorporation of mitigation measures potentially significant hydrology and water quality impacts under Alternative 4 would be reduced to a less-than-significant level.

Land Use and Planning

The change in the method of disposal of the excavated material under Alternative 4 would not change the land use and planning analysis or conclusions reached for the project. However, the increase in activity and the use of informal roads for hauling could result in more people entering the area, thereby increasing activity. However, Alternative 4 would restore the floodplain in a way to prevent undesired vehicular incursions into the floodplain by the public. Therefore, similar to the project, Alternative 4 would not result in a significant environmental impact due to a conflict with the County's General Plan and County Code, the County and LADWP's LORP, and the County's Recreational Use Plan. In addition, both the proposed project and Alternative 4 would not be subject to the provisions of LADWP's HCP. Because neither Alternative 4 nor the project would result in a significant environmental impact related to land use and planning, impacts would be similar.

Recreation

Removing the material from the spoils areas under Alternative 4 would have no change in recreational resources compared to the project. Similar to the project, while Alternative 4 could result in an increased indirect demand on surrounding recreational areas, it is reasonable to assume that this increased demand would not substantially deteriorate regional park facilities. As with the project, Alternative 4 would result in the development of a water trail for non-motorized watercraft. Therefore, as with the project, Alternative 4 would meet the County's General Plan policies by providing additional recreational opportunities in the region that would be designed to accommodate populations with special needs, and also by increasing the County's capacity to serve tourists. In addition, the Lower Owens River Recreation Use Plan specifically supports improving river access and water-based recreation. Impacts regarding recreation would be the same under Alternative 4 as the project since the disposal of the materials at an off-site location does not contribute to potential recreation impacts.

Tribal Cultural Resources

Alternative 4 would be similar to the proposed project, except materials would be hauled off-site for disposal. No tribal cultural resources have been identified within or in the vicinity of the project area as a result of the County's AB 52 consultation efforts or the Sacred Lands File search. Because neither Alternative 4 nor the project would cause a significant environmental impact related to tribal cultural resources, their level of impact in this regard would be similar.

Relationship of the Alternative to the Project Objectives

Under Alternative 4, the construction and operation of the water trail would be similar to the project, except materials would be stored temporarily and then hauled off-site for disposal at the Lone Pine Landfill. Alternative 4 would result in an increase in handling of the material since the removal of materials from the west side of the river would require double handling and the removal of materials from the east side of the river would require triple handling. In addition, hauling the material from the project area to the Lone Pine Landfill would result in an increase in equipment trips. The increase in handling as well as the increase in truck trips would result in an increase in air and greenhouse gas emissions. Although the additional use of equipment and trucks for the offsite disposal of materials would increase emissions, the increase in emissions

would not exceed the significance threshold. In addition, with regard to biological resources, leaving the materials in the stockpile areas, as proposed for the project, could serve to preserve organic materials within the floodplain ecosystem. This benefit would be lost if the materials were hauled to the landfill as proposed under Alternative 4. Finally, hauling the material to the landfill would increase the costs for implementation of the project due to the cost for hauling, the cost for disposal of the material at the landfill, and any additional rehabilitation of the area that may be necessary.

Alternative 4 would meet all project objectives detailed above in Section 4.2. As with the project, Alternative 4 would provide all-abilities access to the Owens River as a recreational resource and would provide recreational and educational opportunities for the surrounding community and visitors. Restoration activities for the natural habitats and species of the Owens River would be consistent with the restoration efforts of the LORP. Additionally, Alternative 4 would meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan. Therefore, all objectives of the project would be met by this alternative.

4.7 Environmentally Superior Alternative

California CEQA Guidelines Section 15126.6 requires the identification of an environmentally superior alternative to the proposed project and, if the environmentally superior alternative is the "No Project Alternative," the identification of an environmentally superior alternative should be identified from among the remaining alternatives. Selection of an environmentally superior alternative is based on an evaluation of the extent to which the alternatives would reduce or eliminate the significant impacts associated with the project while achieving most of the basic objectives of the project. The comparative impacts of the project and the alternatives are summarized in **Table 4-2**, *Comparison of the Impacts of the Project and Alternatives*.

As indicated in Table 4-2, the No Project Alternative would have less impacts than the project as the No Project Alternative would not result in potentially significant impacts since no construction, operation or maintenance of a water trail would occur. The No Project Alternative would result in no impacts to the environment. However, the No Project Alternative would not meet any of the project's objectives. This Alternative would not provide access to the Owens River as a recreational resource and would not provide recreational and educational opportunities for the surrounding community and visitors. In addition, the No Project Alternative would not include restoration activities for natural habitats, and would not meet the habitat, environmental, and social goals of the LORP and the Lower Owens River Draft Recreation Use Plan.

The remaining alternatives were reviewed in accordance with the State *CEQA Guidelines* requirement to identify an environmentally superior alternative other than the No Project Alternative. Alternative 2 would have similar impacts to the project for all resource areas except for air quality, GHG emissions, and hydrology and water quality. For biological resources, the use of an amphibious excavator would result in a reduction of travel along access routes from the river to the spoils areas. In addition, the lower ground pressure of the specialized equipment would result in less compaction of the soil and potentially less damage to vegetation. However, the amphibious excavator would result in an increase in the construction footprint along the

channel compared to the proposed project. Although the weight distribution of the equipment would result in less compaction, the increase in footprint would result in an increase in temporary biological impacts relative to riparian habitat and sensitive natural communities, CDFW potentially jurisdictional areas, and USACE/RWQCB potentially jurisdictional areas. Mitigation for biological resources would be required for Alternative 2, and therefore, the significance determination would remain the same as the project. As for hydrology and water quality, Alternative 2 would have a shorter construction period compared to the project. Thus, temporary impacts related to turbidity, organic-laden sediment, and other pollutants in the waterway would be reduced temporally compared to the project. Mitigation measures would be required for Alternative 2, and therefore while impacts would be decreased, the significance determination would remain the same as the project. In addition, while air quality and greenhouse gas emissions would be less than significant under the project and Alternative 2, the shorter construction period and reduction in the various types of equipment that would occur under Alternative 2 would result in a reduction in air and greenhouse gas emissions. In terms of the project objectives, Alternative 2 would meet all of the project objectives.

Alternative 3 would result in a limited change in impacts compared to the project for all resource areas. Alternative 3 was designed with the intent of reducing biological resource impacts by siting the put-in location farther from the river. However, based on the analysis, impacts to biological resources would remain similar to the proposed project. With regard to project objectives, Alternative 3 would meet all of the project objectives.

Alternative 4 was evaluated to address concerns raised by LADWP with regard to leaving materials in the spoils areas to decompose. Alternative 4 would result in an increase in air and greenhouse gas emissions compared to the project as a result of the additional equipment to move materials and haul trucks that would be necessary to haul the materials to the Lone Pine Landfill. In addition, while Alternative 4 would restore the area to pre-construction conditions, this alternative would result in an increase in the need for restoration. The additional effort could result in the potential for the introduction of weeds in the area, which would be similar to the proposed project relative to the construction of the water channel, but greater than the proposed project from the spoils areas through the areas that must be accessed to haul the material off-site. Impacts to other issue areas would be the same as under the project. With regard to project objectives, Alternative 4 would meet all of the project objectives.

In summary, the *CEQA Guidelines* Section 15126.6(a) directs that an EIR consider alternatives that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. While the project would result in potentially significant impacts, with the implementation of mitigation measures no significant and unavoidable impacts would result. In considering Alternatives 2, 3, and 4 relative to the project, Alternative 3 would result in similar impacts to the project in all of the issue areas. Alternative 2 would increase temporary significant impacts to biological resources compared with the project but the specialized equipment would result in less compaction and less equipment trips to move materials to the spoils areas. In addition, Alternative 2 would decrease potentially significant impacts to air quality, GHG emissions, and hydrology and water quality as discussed above. However, as with the project, with the implementation of mitigation measures for Alternative 2,

impacts would be less than significant. Alternative 4 would result in an increase in air and greenhouse gas emissions resulting from the additional handling and hauling of materials. However, as with the project such impacts would be less than significant. Alternatives 2, 3, and 4 would meet all objectives of the project.

TABLE 4-2
COMPARISON OF THE IMPACTS OF THE PROJECT AND ALTERNATIVES

Issue Areas	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Alternative Construction Approach	Alternative 3: Alternative Location of Put-In Facility	Alternative 4: Off-Site Disposal of Materials Alternative
3.1 Aesthetics	LTS	=	=	=	=
3.2 Air Quality	LTS	=	▼	=	▲
3.3 Biological Resources	LTSM	▼ ▼	=	=	▲
3.4 Cultural Resources	LTSM	▼ ▼	=	=	=
3.5 Geology, Soils, and Seismicity	LTSM	▼ ▼	=	=	=
3.6 GHG Emissions	LTS	=	▼	=	▲
3.7 Hydrology and Water Quality	LTSM	▼ ▼	▼	=	=
3.8 Land Use	LTS	=	=	=	=
3.9 Recreation	LTSM	▼ ▼	=	=	=
3.10 Tribal Cultural Resources	LTS	=	=	=	=

▲ ▲ Alternative would result in greater issue area impacts when compared to the proposed project and the difference would be significant.
▲ Alternative would result in greater issue area impacts when compared to the proposed project; this difference would not change the significance conclusion.
= Alternative would result in similar issue area impacts when compared to the project.
▼ Alternative would result in reduced issue area impacts when compared to project; no change to the significance conclusion.
▼ ▼ Alternative would result in reduced issue area impacts when compared to the proposed project and the difference would eliminate a potentially significant impact.

LTS = Less than Significant Impact; No Mitigation is Required
LTSM = Less than Significant Impact with Mitigation

Source: ESA 2019.

CHAPTER 5
Other CEQA Considerations

This chapter presents the evaluation of other types of environmental impacts required by CEQA that are not covered within the other chapters of this Draft EIR. The other CEQA considerations include environmental effects that were found not to be significant, growth-inducing impacts, significant irreversible environmental changes that would be caused by the proposed project, and significant and unavoidable adverse impacts.

5.1 Environmental Effects Found Not to Be Significant

CEQA Guidelines Section 15128 requires that an EIR "contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and therefore were not discussed in detail in the EIR." This section discusses those issue areas that were determined not to require further analysis in this Draft EIR through the Initial Study, which is contained in Appendix A of this EIR. The Initial Study was completed in May 2018 and is based on the CEQA Guidelines Appendix G Checklist in effect at that time. On December 28, 2018, the California Natural Resources Agency adopted revisions to the CEQA Guidelines Appendix G Checklist. In light of the revisions, the questions provided below reflect the revised Appendix G Checklist. Information is provided from the Initial Study and supplemented, if necessary.

5.1.1 Aesthetics

Would the project create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

The proposed project would remove vegetation from the Owens River to allow for the passage of watercraft, which could create more reflective surface area resulting in glare. However, the amount of area would be small relative to the surrounding area and no sensitive receptors are located nearby. No lighting would be provided at the water launch and take-out facilities since the land on which these facilities would be located is owned by LADWP and is open for day-use only. Therefore, the project would result in a less than significant impact with regard to light and glare.

5.1.2 Agricultural and Forestry Resources

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The proposed project area is designated as "Not Mapped" in the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency (FMMP) and the project would not convert an agriculture use to a non-agriculture use. Therefore, the proposed project would not result in conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural uses and the project would result in less than significant impacts to agricultural resources.

Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The proposed project area is not mapped by the FMMP and is located within a larger geographic area designated as Natural Resource (NR) in the Inyo County Draft General Plan Land Use Element and is zoned Open Space-Recreational (OS-R). Neither the OS-R zoning nor the NR County designation includes exclusive agricultural land use requirements, and do not list existing Williamson Act contracts in the proposed project area. Therefore, the proposed project is consistent with land use designations and would have no impacts associated with agricultural use and Williamson Act contracts.

Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project area is largely a natural setting consisting of floodplain vegetation, including salt-grass meadow and tree and shrub willow woodland. The project area does not include designated forest land or timberland.

Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project area is designated NR and zoned OS-R, which do not support forest lands or timberlands. Therefore, the project would have no conflict with existing zoning for forest land, timberland, or timberland-zoned Timberland Production.

Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The project area is largely a natural setting with the dominant vegetation being salt-grass meadow and tree and shrub willow woodland. The surrounding land uses include cattle grazing, electric transmission utility corridor, a wastewater treatment facility, and a county waste disposal facility.

Because the project area is confined to the perimeter of the floodplain, no conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use would occur. The existing grazing activities on lands within the floodplain adjacent to the river would continue to occur after implementation of the proposed project. Therefore, the project would not result in the conversation of farmland to non-agricultural use or forest land to non-forest use.

5.1.3 Air Quality

Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The proposed project would use land- and water-based hand and mechanical construction equipment for vegetation removal and construction of low lying launch/take-out structures, which could have the potential to cause objectionable odors associated with diesel exhaust in the vicinity of the project site. Clearing and excavation in the channel would likely disturb anaerobic sediments in the areas where the river is generally stagnant as a result of large amounts of occlusion. The removal of vegetation would also result in the removal of muck, which can have hydrogen sulfide and therefore, can give off a rotten egg odor. Since construction would occur in the winter the lower temperatures would keep down the odor until it dissipates. Given the small volume of river bottom that would be disturbed at any one time, odor would not carry to the nearest sensitive receptors. In addition, any odors would be temporary in nature and confined to the floodplain between Highway 136 and Lone Pine Narrow Gauge Road, where passing receptors would experience odors momentarily. Odors during construction and operation would not be sufficient to affect a substantial number of people or result in a nuisance. Because of the temporary nature of the emissions and the highly diffusive properties of exhaust, odors associated with project would be less than significant.

5.1.4 Energy

Would the result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Would the project conflict or obstruct a state or local plan for renewable energy or energy efficiency?

The level and duration of construction activity associated with the project would be small scale and short-term. Construction activities, such as vegetation clearing, and construction worker commutes to and from the site would result in a demand for fuel (gasoline and diesel). Construction is not expected to generate demand for electricity or natural gas. Since the demand for fuel would be temporary and limited to a relatively small number of equipment, the fuel demand would be adequately served by existing supplies, and no new fueling infrastructure would be required. Construction activities would also use manual equipment in areas where it is necessary or more efficient to perform the tasks given terrain restrictions and other factors. Construction trucks would be required to comply with the State's anti-idling Air Toxics Control Measure, which limits idling to five minutes or less at a location. The use of manual equipment when it is necessary or more efficient and compliance with the State's anti-idling requirement would eliminate wasteful, inefficient, and unnecessary consumptions of energy.

Operation of the project would generate vehicle trips to the site from recreating visitors. The project is anticipated to result in approximately 4,400 annual launches, including private parties as well as concessionaires. Visitor trips to this project site would likely not be all new trips, but would likely be redirected trips made by owners of non-motorized watercraft who already make recreational trips to other watercraft recreational areas. Operation of the project would also require periodic maintenance trips for vegetation clearing, trash pick-up, restroom servicing, and other maintenance activities. However, maintenance would involve relatively few vehicle trips on a periodic basis. Given the small number of maintenance trips, and given that the visitor trips to the site would likely not be all new trips but would include redirected trips, the fuel demand for vehicles would be adequately served by existing supplies, and no new fueling infrastructure would be required. In addition, no electricity would be used at the launch and take-out facilities since these would be located on LADWP property that is accessible for day-use only. Operation of the project would not include substantial demand for electricity or natural gas as there would no permanent structures aside from vault toilets and launch and take-out facilities. Thus, as the project would result in a relatively minimal change in transportation fuel demand and would not include substantial demand for electricity or natural gas, the project would not result in the wasteful, inefficient, and unnecessary consumptions of energy. Therefore, construction and operation of the project would result in less than significant impacts with regard to energy.

5.1.5 Geology and Soil

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)?

Twelve major Alquist-Priolo faults are located in Inyo County. The majority of the project area is located in the Lone Pine 7.5-minute quadrangle, with the southern end of the project area located in an unmapped area. The Lone Pine 7.5-minute quadrangle map identifies active faults as close as one mile west of the project area. The nearest active fault to the project area is the Owens Valley Fault, which is capable of generating an earthquake of a magnitude of 8.0 or greater. The fault's southerly extent is located near Owens Lake, stretches north through Lone Pine and follows the floor of the Owens Valley northward to the Poverty Hills, where it steps to the northwest across Crater Mountain and through Big Pine. Despite the proposed project's close proximity to the Owens Valley Fault, the Owens River itself is located outside of an Alquist-Priolo zone, where the potential for a rupture of a known earthquake fault is considered to be low. Therefore, the project would not directly or indirectly cause substantial and adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

While the proposed project would be located near active faults, as identified on the Lone Pine 7.5-minute quadrangle map, the project would primarily consist of removing vegetation from the

river channel to allow for passage of watercraft as well as the construction of associated facilities. All of the facilities constructed as part of the proposed project would be required to comply with the seismic regulations of the California Building Code (CBC) and the County's Codes to ensure structural integrity of all facilities during an earthquake event, including during strong seismic ground shaking. Therefore, impacts would be less than significant.

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The proposed project area is not located within a County-designated Natural Hazard (NH) area and is not mapped by the California Geological Survey (CGS) as a landslide study area. Despite the lack of CGS mapping, general site surveys of the project area were sufficient to determine that the project area is characterized by a broad, relatively flat basin floor that does not have any steep mountain canyons in close proximity to the proposed project site. Therefore, there is no potential for landslides to occur on or near the proposed project site, and no impact would occur.

Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project would not incorporate septic tanks or alternative waste water disposal systems but would include vaulted toilets. Therefore, no impact with regard to this issue would occur.

5.1.6 Hazards and Hazardous Materials

Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Manual and machine methods would be used to construct the project. Typical hazardous materials used during construction could include hydraulic fluids, paints, cleaning materials, and vehicle fuels. The use of these materials during project construction would occur in accordance with standard construction practices, as well as with applicable federal, state, and local health and safety regulations. Therefore, impacts would be less than significant.

Ongoing maintenance activities are anticipated to maintain the integrity of the river channel as well as the launch and take-out facilities, which would incorporate the use of manual work or mechanical clearing activities using watercraft, such as a Truxor 5000, on an as-needed basis. The project would bring vehicles in close proximity to the river channel in the launch/take-out areas. These vehicles, in addition to those used during periodic maintenance. Although these vehicles can release various water pollutants into the environment, including oil, brake dust, and spilled fuel, accumulated water quality pollution is expected to be limited given the relatively low number of visitors expected annually. In addition, most automotive-related pollutants are hydrophobic and tend to absorb to sediments near the pollutant release point, and areas covered in

all-weather surface would reduce erosion potential, thereby minimizing the potential for transfer of such sediment into the waterway. Therefore, the project would not create a significant hazard to the public or the environment through routine transport, use or disposal of hazardous materials or reasonably forseeable upset and accident conditions involving the use of hazardous materials.

Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are no schools within 0.25 miles of the project area. The nearest existing or proposed school is the Lone Pine Paiute Shoshone Tribe Nest School, which is located approximately 0.96 miles west of the project area. Lone Pine High School is located approximately 1.2 miles west of the project area. Therefore, the project would not emit hazardous emissions or handle hazardous materials within 0.25 miles of a school.

Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Government Code Section 65962.5, amended in 1992, requires the California Environmental Protection Agency (CalEPA) to develop and update annually the Cortese List, which is a list of hazardous waste sites and other contaminated sites. According to the Hazardous Waste and Substances Site List – Site Cleanup website, accessed on May 11, 2018, no hazardous waste sites are located on or in the vicinity to the project site. Therefore, implementation of the project would not be located on a hazardous materials site which would create a significant hazard to the public or the environment. No impact would occur.

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The Lone Pine Airport is located approximately 1.1 miles west of the project area. Inyo County has incorporated an Airport Hazard (AH) Overlay Districts into its code in order to protect the lives and property of users of the various County airports as well as the occupants of the land in the vicinity of County airports. The project area is not located in the vicinity of any of the identified zones and no impact would occur.

Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Inyo County Regional Transportation Plan (RTP) identifies evacuation routes applicable to the project area. The primary evacuation route for Lone Pine is US Highway 395, which is the north-south arterial traversing Inyo County, located approximately 1.5 miles west of the proposed project. Other highways that are identified as important by the RTP are SR 127, SR 178, and SR 190; however, none of these evacuation routes are within 15 miles of the proposed project area. The proposed project is not expected to result in a significant increase of workers or recreational visitors driving on US Highway 395 to the extent that they would impair implementation of the

RTP or physically interfere with emergency evacuation plans in Inyo County. Therefore, no impact would occur.

Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project is located in an area designated by the California Department of Forestry and Fire Protection's (CAL Fire) Fire Resource and Protection Program (FRAP) as "High LRA" in Local Responsibility Area (LRA) mapping, and as "High" in State Responsibility Area (SRA) mapping. However, the project would not introduce residential, commercial, or industrial structures into the area. While construction could include materials that are considered flammable, such as fuels, the handling and storage of such materials would be conducted in accordance with applicable regulations and BMPs would be implemented to prevent accidental spills and to dictate a response in the case of a spill.

Operation of the project would allow non-motorized watercraft access along the approximately 6.3-mile stretch of the Lower Owens River, where this type of recreational use would not introduce flammable materials to the river channel. Furthermore, since the watercraft utilizing the ORWT would be non-motorized, there would be no potential for to the watercraft to produce a spark and ignite a fire in the surrounding vegetation along the river channel. Although the project would increase the number of visitors to the area which could increase the potential for fires, due to the nature of the project, the risk of wildfire would not substantially increase with project implementation. It is expected that the majority of use days would occur during the growing season when the floodplain is green, moist and less flammable. Additionally, the project would install educational signage that clearly conveys the project area's potential for wildfire risk, wildfire reporting instructions, and safety instructions, such as leaving possessions and move to the surrounding upland, preferably in an unvegetated patch, in the event of a wildfire. Furthermore, if a fire were to occur, it is likely that the fire would remain isolated to the floodplain based on recent experience.[1] Therefore, potential impacts on people or structures associated with fire hazards would be less than significant.

5.1.7 Hydrology and Water Quality

Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction and operation activities associated with the project do not include drawing from existing wells or aquifers, or any other involvement with groundwater, that would have the potential to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Therefore, impacts would be less than significant.

[1] The "River Fire" occurred in the project area in February 2013. The fire occurred on both sides of the Owens River in the floodplain arease located south of Narrow Gauge Road and north of Highway 136. http://cdfdata.fire.ca.gov/incidents/incidents_details_info?incident_id=769

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

(iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

The proposed project would result in the use of land- and water-based vehicles and construction equipment to remove or relocate vegetation and other occlusions in the river channel and develop the launch and take-out ramp. Upon completion of the construction, the project would provide recreational opportunities for non-motorized watercraft. The project would construct launch and take-out facilities within the floodplain of the Lower Owens River, which is designated by the Federal Emergency Management Agency (FEMA) as a Zone A Special Flood Hazard Area. The project would use all-weather surfaces rather than paved roads which would help to ensure that runoff volumes from the site would be minimized. Runoff would not be directed to an existing or planned stormwater drainage system. Therefore, the project would not create or contribute runoff that would exceed the capacity of the existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts related to stormwater drainage would be less than significant.

In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project site is not located in a tsunami or seiche zone. The project area's distance from any ocean or dam, suggests that flooding risks associated with dam failure or levee failure, or inundation caused by seiches or tsunamis, are remote. However, the project site is located in an area designated by FEMA as a Zone A Special Flood Hazard Area.[2] However, Section 3.7, Hydrology and Water Quality, provides a detailed analysis of potential water quality impacts that could occur from project implementation. 5.1.8 Land Use and Land Use Planning

Would the project physically divide an established community?

The project is located approximately 1.5 miles east of Lone Pine, the nearest established community, in a geographic area designated as a Natural Resource (NR), included in the Draft Lower Owens River Recreation Use Plan, and zoned Open Space-Recreation (OS-R) by Inyo County. The project would provide recreational opportunities along the Owens River. Therefore, the project would not divide any established communities in Inyo County.

5.1.8 Mineral Resources

Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

According to the Mineral and Energy Resource Implementation Measures Chapter of the Inyo County Draft General Plan, there are no known mineral resources located in the floodplain east of

[2] Federal Emergency Management Agency. 2011. NFIP Flood Insurance Rate Map Number 06027C2200D. August 16. Accessed May 11, 2018. http://inyocounty.us/FEMA/Documents/2200D.pdf.

Lone Pine, or in the specific location of the project site. Additionally, the nearest location determined to have potentially significant mineral value, as identified by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP) of the CGS, are the Inyo Mountains to the east of Lone Pine. This area is also outside the boundary of the project site. Therefore, the project would not result in the loss of availability of a known mineral resource that is of value to the region and the residents of the state.

Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Trona is mined from the Owens Lake lakebed, which can be considered local but is downstream and outside the boundary of the project site. As such, the project impacts would not result in the loss of availability of any locally-important mineral resources in the project area.

5.1.9 Noise

Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction vehicles and equipment used for the project may have the potential to temporarily increase ambient noise levels in the project vicinity above existing levels. However, because noise and vibration levels are subject to rapid dissipation, the closest sensitive receptor is located approximately 0.9 miles from the site, and the site is lower than the terrace where the town is located, the project would not have the potential to expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or other applicable agency standards during construction or to expose people to excessive groundborne vibration or groundborne noise. With regard to wildlife, construction and maintenance associated with the project would be short-term, temporary and periodic, and would occur outside of the migratory bird breeding season (approximately March 1 through September 1). Thus, the project is not expected to contribute to substantial temporary increases in ambient noise levels and would not indirectly impact local wildlife. Therefore, construction noise and vibration impacts would be less than significant.

When construction is complete and the recreational facilities are in operation, visitors are expected to arrive at this segment of the river channel for recreational purposes and spend time in the project area, which may increase ambient noise levels in the project vicinity. However, driving to the river would occur along existing roadways, and no new roads would be constructed to bring people to the site. In addition, the project would allow for non-motorized watercraft, which would not create any loud noise along the river associated with the recreational activities. Typical noise from users, such as car doors and human voices, would occur at the launch and take-out point. However, noise and vibration levels are subject to rapid dissipation, and because there are no sensitive receptors in close proximity to the river, the project would not have the potential to contribute to substantial permanent increases in ambient noise.

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

As discussed above, Lone Pine Airport is located approximately 1.1 miles west of the project site and there are no private airstrips in the vicinity of the site. The site is not located in Inyo County's Airport Hazard (AH) Overlay District. Therefore, the project would not expose people residing or working in the project area to excessive noise levels.

5.1.10 Population and Housing

Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?

The project would provide recreational opportunity through the development of a water trail for non-motorized watercraft. The project would not directly increase population since the project does not involve construction of new homes or businesses. The project would not require a large number of construction workers and some of the labor force would be drawn from within the region. The project would not indirectly induce population growth in the region by extending a road or providing infrastructure, such as contributing to water supply capacity. Therefore, no impact would occur.

Would the project displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere?

The project is located in an area designated Natural Resources (NR) in the Inyo County General Plan and zoned Open Space (OS-R). Therefore, no residents or homes are located in the project area and the project would not displace existing housing or necessitate the construction of replacement housing elsewhere. Therefore, no impact would occur.

5.1.11 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Fire protection?

The Lone Pine Fire Department (LPFD), which is the closest fire station to the project site, is located approximately 1.38 miles west of the site. Although the project site is technically outside of LPFD district boundaries, LPFD would likely respond to calls from the project area because of a mutual aid agreement among fire protection agencies in Inyo County. LPFD is one of fourteen volunteer, community service district, local and state (CAL Fire) fire stations that provide fire protection and emergency medical services within Inyo County.

The project components would not create environmentally impactful structures that would significantly increase the incidence of fire hazards. While the project could place additional demands on the LPFD's ability to provide emergency services, river flow in the channel is controlled and the launch/take-out structures would allow safe access to the ORWT for people of all abilities, including the disabled. Additionally, signs with safety information would be placed at the launch/take-out facilities to contribute to lowering the incidence of emergencies in the ORWT. Therefore, the project would not create a significant demand for the construction or alteration of government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. Impacts would be less than significant.

Police Protection?

The Inyo County Sheriff Substation, which is the closest station to the project site, is located approximately 1.5 miles west of the site. The Inyo County Sheriff Substation, in conjunction with the Inyo County Sheriff Station based in the community of Independence (15 miles north of the project site), provides police protection services to the community of Lone Pine. The project would provide recreational opportunities, which could result in some increased demand on the local sheriff station. However, due to the relative geographic isolation of Lone Pine, the potential increase of recreational visitors would not create an increase in demand such that the construction or alteration of government facilities in order to maintain acceptable service ratios, response times, or other performance objectives would be necessary. Impacts would be less than significant.

Schools?

The Lone Pine Unified School District (LPUSD) serves residents within Lone Pine. LPUSD includes one combined elementary and middle school and one high school. The project would not introduce new resident population in or around the project site. Therefore, the project would not result in an increase in demand on LPUSD schools, and no impact would occur to schools.

Other Public Facilities?

Lone Pine Library, a branch library of the Inyo County Free Library, is located approximately1.4 miles west of the project site. Since the project would not introduce new residents to Lone Pine, no increase in demand on library services would occur.

During construction and operation of the proposed project, other governmental services, including roads, would be used. While the project would result in the use of existing roadways, the potential increase in trips would not necessitate the upkeep of such facilities beyond normal requirements. Therefore, the project would result in less-than-significant impacts related to roadways.

5.1.12 Transportation

Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities??

Would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

The Congestion Management Plan (CMP) is a State-mandated program enacted by the State legislature to address the impacts that urban congestion has on local communities and the region as a whole. Inyo County Local Transportation Commission (ICLTC) is the local agency responsible for implementing the requirements of the CMP in the project region. The 2015 Inyo County Regional Transportation Program states that the closest state highway junction to the project site, the US 395 and SR 136 junction, is already one of the most heavily impacted junctions in the County during the peak recreation season. Traffic studies outlined in the Regional Transportation program have identified this region's peak recreation season as July, and attributed the majority of traffic during the peak recreation season to Death Valley National Park and the Inyo National Forest.

Construction plans for the project would include a traffic control plan as appropriate that would comply with all applicable regulatory requirements and encroachment permits as may be necessary. Project construction would not occur during the breeding season, which coincides with the peak recreation summer season. Thus, project construction would not add traffic during the peak recreation season and would not contribute traffic at the US 395- SR 136 junction. In addition, bringing equipment to the site and on-road truck trips would be made outside of peak traffic hours. Movement of material from river to spoils areas would occur on approved service and temporary floodplain routes. Thus, truck trips would not impact congestion at the US 395-SR 136 junction, or nearby intersections, streets, highways or freeways. Additionally, trucks and equipment would yield to area traffic and to livestock, and speed within the floodplain would not exceed 15 mph, and 20 mph on entry roads.

Once operational, the project could draw new recreational visitors and generate additional vehicle trips throughout Inyo County. However, it is expected that the ORWT would largely be used by visitors who already come to the area or provide a different recreational opportunity for people that currently live in or visit the area. In addition, it is likely that one or more private concessioners would provide shuttle service between Lone Pine and the launch and take out facilities. Based on input from people in the tourism industry and research on recreational demand, Inyo County estimates that over time annual launches may reach approximately 4,400 launches, including private parties as well as concessionaires.[3,4] These trips would be spread

[3] Inyo County staff conferred with: Inyo National Forest Recreation Officer, Shane Hoskins; Sierra Nevada Conservancy's Eastern California Representative Danna Stroud; Inyo County's Park Manager, Steve Graves; Lone Pine Chamber of Commerce's, Kathleen New; and Eastern Sierra InterAgency Visitor Center Director, Matt Helt. In addition, documents used included: 2016 Outdoor Recreation Participation Topline Report, developed by the Outdoor Foundation; 2016 California Travel Impacts by County, sponsored by Visit California; Bureau of Reclamation's publication, "Estimating Future Recreation Demand: A decision Guide for the Practitioner."

[4] A single concessionaire with a six-place kayak/canoe trailer can provide up to three daily departures on the weekend and two departures on weekdays during the high season, April through September, potentially serving 2,600 users.

throughout the year and throughout the area. In addition, trips would be spread throughout the day and would not likely occur all at once or during peak traffic hours. It is reasonable to assume that a relatively large proportion of these vehicle trips would be local trips generated from residents accessing the ORWT and visitors already in the area utilizing the many other recreational facilities/locations in the vicinity of the project, such as Mount Whitney or the Alabama Hills, who wish to also use the ORWT during their stay. With the majority of vehicle trips occurring on local roadways within Lone Pine and the surrounding area, the addition of project-generated trips to existing volumes on these roadways would not result in a substantial increase in traffic volumes as these roadways support a relatively low population and are not close to exceeding their volume capacity. The remaining portion of trips could be generated by visitors traveling to the County via regional roadways, including Highway 395 and State Route 136, to access the ORWT. According to the County Regional Transportation Program, the intersection of Highway 395 and State Route 136 has experienced a 0.8 percent increase in average daily traffic volumes from 2003 to 2013, where the addition of project-generated vehicles would not greatly increase the traffic volume at this intersection (County of Inyo, 2015). Similar to effects to local roadways, the project would not cause a substantial increase in traffic volumes using regional roadways as trips would occur at various times throughout the year and at various times of the day. Thus, it is not anticipated that use of the ORWT would generate a substantial amount of new vehicle trips on US 395 or SR 136 which would cause the existing operating levels to deteriorate and would not have any impact on the project's compliance with the local CMP. Impacts would be less than significant.

Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The project would not alter existing roadways in the surrounding vicinity, and there are no existing hazardous design features such as sharp curves or dangerous intersections on-site or within the project vicinity. Access to the site would be designed in compliance with applicable regulations. Additionally, construction of the proposed project would not require any temporary lane or sidewalk closures. No impacts would result with regard to this issue.

Would the project result in inadequate emergency access?

The project site is accessible from the north via Lone Pine Narrow Gauge Road, from the west via Sub Station Road, and from the south via Highway 136. While the ORWT would be established along an approximately 6.3-mile stretch of the Lower Owens River, the direct distance from the boat launch facility to the boat take-out facility is approximately 3.3 miles, where driving between the two facilities would take approximately 15 minutes. As is the case with many geographic locations designated as Natural Resource (State) or Open Space zone (County), emergency services may be unable to drive vehicles to all parts of the ORWT due to undeveloped terrain. However, there are a number of primitive roads that provide access to the project area from the bluffs as well as numerous primitive ranch roads located in the floodplain. In addition, the proposed project's natural environment is relatively flat. Therefore, emergency vehicles would be able to access the area and any potential emergency incidents can also be reached on foot by emergency personnel. To reduce the amount of instances where emergency services would be needed, weather resistant signage would be installed at the launch/take-out structures to

provide recreational visitors with water safety information, rules, emergency contacts, and interpretive information. To provide user location information, reference navigational mile-markers would be located along the waterway. Fencing would be installed to separate the launch point from grazing activities. Therefore, impacts would be less than significant.

5.1.13 Utilities and Service Systems

Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications, the construction of which could cause significant environmental effects?

The project would not result in an increase in water demand as no running water would be installed. In accordance with the Inyo County requirements, the vault toilets that would be located at the public use locations would use organic chemicals on a temporary and/or occasional basis and would be pumped out periodically so the waste can be hauled out to municipal wastewater treatment plant. The amount of wastewater would be minimal. No utilities, such as electricity or telecommunications, would be installed or necessary. Therefore, the project would not result in the relocation or construction of new or expanded utilities, the construction of which could cause significant environmental effects. Impacts would be less than significant.

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

This portion of the Lower Owens River is legally bound to specific rates of water flow per the agreement established between Inyo County and LADWP. The minimum rate of water flow is 40 cfs, which would contribute to the project having a less than significant demand for water as it would have a sufficient water supply to support the proposed recreational project once the construction period is complete. No water would be provided at the launch/ take-out facilities. No increase in water demand would occur, and impacts would be less than significant.

Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The project site is located within the California Water Quality Control Board's Lahontan Basin Region, or Region 6. The project would not incorporate running water but would provide vault toilets at the public use locations. In accordance with the Inyo County requirements, these toilets would use organic chemicals on a temporary and/or occasional basis and would be pumped out periodically so the waste can be hauled out to municipal wastewater treatment plants to eliminate harmful wastewater impacts. The amount of wastewater would be minimal. Therefore, the project would not generate wastewater that would exceed wastewater treatment requirements or require the construction of new water or wastewater treatment facilities, or the expansion of existing facilities. Impacts would be less than significant.

Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

During construction and operation of the project, waste would be generated by construction workers and recreational users at the launch/take-out facilities. The amount of waste would be minimal and would likely consist of waste generated from meals, such as bags, wrappers, and cans. Construction workers would remove their waste from the site. Trash receptacles and signs to establish rules for waste disposal would be provided at the launch/take-out facilities areas for use by recreational users of the water trail.

Waste management services for the project site are provided by the Inyo County Waste Management Department. The waste generated by the project would be disposed at the landfill located in Lone Pine about two miles away from the site. The Lone Pine Landfill accepts industrial waste, mixed municipal waste, agricultural waste, construction/demolition waste, etc., and is estimated to have sufficient capacity through the year 2052. In addition, the project would comply with all applicable federal, state, and local statutes and regulations related to solid waste. There are no specific reduction statutes or regulations applicable to the project. Therefore, the project would have a less-than-significant impact regarding solid waste disposal.

5.1.14 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Substantially impair an adopted emergency response plan or emergency evacuation plan?

Due to slope, prevailing winds, and other factors, exacerbate wildfire risk, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project is located in an area designated by the California Department of Forestry and Fire Protection's (CAL Fire) Fire Resource and Protection Program (FRAP) as "High LRA" in Local Responsibility Area (LRA) mapping, and as "High" in State Responsibility Area (SRA) mapping. With regard to evacuation routes, the Inyo County Regional Transportation Plan (RTP) identifies evacuation routes applicable to the project area. The primary evacuation route for Lone Pine is US Highway 395, which is the north-south arterial traversing Inyo County, located approximately

1.5 miles west of the proposed project. The proposed project is not expected to result in a significant increase of workers or recreational visitors driving on US Highway 395, at least to the extent that they would impair implementation of the RTP or physically interfere with emergency evacuation plans in Inyo County.

The project would not introduce residential, commercial, or industrial structures into the area. While construction could include materials that are considered flammable, such as fuels, the handling and storage of such materials would be conducted in accordance with applicable regulations and BMPs would be implemented to prevent accidental spills and to dictate a response in the case of a spill. Operation of the project would allow non-motorized watercraft access along the approximately 6.3-mile stretch of the Lower Owens River, where this type of recreational use would not introduce flammable materials to the river channel. Furthermore, since the watercraft utilizing the ORWT would be non-motorized, there would be no potential for the watercraft to produce a spark and ignite a fire in the surrounding vegetation along the river channel.

The project would result in an increase in visitors to the area, which could increase the potential for wildfires. Weather resistant signage protected by a kiosk would be included at the boat launch and take-out facilities, which would convey water and wildfire safety information, rules, emergency contacts and interpretative information. In addition, as discussed under Fire Protection, the LPFD is located approximately 1.38 miles west of the site. The LPFD would likely respond to calls from the project area because of a mutual aid agreement among fire protection agencies in Inyo County. There is adequate access to the project area and no barriers that would preclude emergency vehicles from entering the area. Impacts would be considered less than significant as the area is not in a very high fire hazard severity zone, the project would provide a water-based recreational opportunity, educational signage would be provided that would include wildfire safety information, no structures would be built, and there are fire protection services in the area.

5.2 Growth-Inducing Impacts

Pursuant to Section 15126.2(e) of the CEQA Guidelines, an EIR must address whether a project will directly or indirectly foster growth. Section 15126.2(e) reads as follows:

> *[An EIR shall] discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have direct or indirect growth inducement potential. Direct growth inducement would result if a project involved construction of new housing. A project can have indirect growth inducement if it would establish substantial new permanent employment opportunities (*e.g.*, commercial, industrial or governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. A project would also have an indirect growth inducement effect if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. As such, based on this CEQA definition, the project would not result in a direct impact since no housing would be provided. As such, the proposed project would not have direct growth inducement potential.

Therefore, assessing the growth-inducement potential of the proposed project involves answering the question: "Will implementation of the proposed project indirectly support economic or population growth, or the construction of additional housing?"

The project does not have the potential to result in indirect growth inducement effects based on the removal of an obstacle to growth or development or based on a substantial construction effort, which could result in new short-term employment opportunities and an increased need for housing. However, the project could have the potential to draw more visitors to the area and the County overall, which could indirectly support economic growth in the region and thereby result in future growth.

While the project would establish a first-of-its-kind designated water trail in California, the project is not expected to draw significant amounts of new visitors to the County but rather would largely be used by visitors who already come to the area for other recreational opportunities, such as Mount Whitney or the Alabama Hills, and by people that currently live in the area. Although the amount of visitors to the area could slightly increase with implementation of the project, the addition of the ORWT as a recreational resource in the area could foster longer stays by visitors, which would increase economic activity in the County. In this regard, the project would support the goals of the Economic Element of the County's General Plan by encouraging more recreational use and increase destination spending in the County. However, this increased economic activity is not anticipated to be great enough to result in new residents moving to the region which would lead to population growth. Furthermore, the construction and operation of the project would not install new infrastructure, such as major roadways or utilities that would indirectly support population growth but rather would provide accessory facilities to support access and use of the water trail. Overall, while implementation of the project could increase economic activity in the County by creating another recreational resource for visitors and residents, the project would not indirectly result in short- or long-term population growth. As such, impacts to growth inducement would be less than significant.

5.3 Significant Irreversible Environmental Changes

CEQA Guidelines Section 15126.2(d) requires that an EIR analyze the extent to which a proposed project's primary and secondary effects would impact the environment and commit

nonrenewable resources to uses that future generations would not be able to reverse. “Significant irreversible environmental changes” include the use of nonrenewable natural resources during the initial and continued phases of the project, should this use result in the unavailability of these resources in the future. Primary impacts and, particularly, secondary impacts generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a proposed project. Irretrievable commitments of these resources are required to be evaluated in an EIR to ensure that such consumption is justified.

The project would necessarily consume limited, slowly renewable and non-renewable resources during construction and operation of the project. Development of the ORWT would require a commitment of resources that would include diesel, gasoline, or oil for construction equipment, some materials for the launch/take-out facilities and gasoline for the transportation of goods and people to and from the project site. Some of the construction would be completed using hand tools. Construction of the associated facilities, the launch/put-out facilities would result in the minimal use of various renewable natural resources, such as water, lumber, and soil. No operational energy use would occur within the facilities area since power supply would not be provided at the launch/take-out facilities. The energy consumed in developing the water trail may be considered a permanent investment.

The project would provide recreational opportunities for the use of non-motorized watercraft in this portion of the Owens River. Operation or use of the water trail would result in the consumption of fuel for vehicles bringing visitors to the river. However, while the project is anticipated to result in approximately 4,400 annual launches, including private parties as well as concessionaires, visitor trips would likely not be all new trips but would likely be redirected trips made by owners of non-motorized watercraft who already make recreational trips to other watercraft recreational areas. In addition, it is anticipated that some of the launches would occur through concessionaires, which would result in a reduction of fuel use for that portion of the use.

Creation of the ORWT would not use nonrenewable fossil fuels at a greater rate than other typical construction projects. The project would not increase the overall rate of use of any nonrenewable natural resource or result in the substantial depletion of any nonrenewable resource. Compared to other development projects, construction and operation of the ORWT would use substantially less nonrenewable resources during construction and operation due to the project being a recreational facility for non-motorized watercraft and short-term, minimal annual maintenance. Therefore, the project would not increase the overall rate of use of any renewable natural resource or result in the substantial depletion of any renewable resource.

5.4 Significant and Unavoidable Impacts

CEQA Guidelines Section 15126.2(c) requires that an EIR describe any significant impacts that cannot be avoided, including those impacts that can be mitigated but not reduced to a less-than-significant level. Chapter 3 of this EIR describes the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts, where feasible. As discussed in this EIR, the project would not result in any significant and unavoidable impacts. Potentially significant impacts were identified in the areas of biological resources, cultural

resources, geology and soils, and hydrology and water quality. However, these potentially significant impacts would be mitigated to below a level of significance with implementation of mitigation measures identified in this EIR.

5.5 Potential Secondary Effects Related to Project Mitigation Measures

Section 15126.4(a)(1)(D) of the CEQA Guidelines requires mitigation measures to be discussed in less detail than the significant effects of the proposed Project if the mitigation measure(s) would cause one or more significant effects in addition to those that would be caused by the Project as proposed. With regard to this section of the CEQA Guidelines, the recommended mitigation measures for the Project were evaluated to determine if potential impacts would occur. The following provides a discussion of the subject areas in which mitigation measures are required, as well as any potential secondary effects that could occur as a result of the implementation of the mitigation measures. For the reasons stated below, it is concluded that the Project's mitigation measures would not result in significant secondary impacts.

Biological Resources

Mitigation Measures BIO-1 through BIO-10 establish protections for biological resources primarily through surveys, monitoring and reporting, implementation of educational programs, as well as establishing restrictions for construction and maintenance activities and requiring permits. The mitigation measures ensure that resources would not be damaged or harmed consistent with State CEQA Guidelines and regulations that provide for the protection of such resources. No construction of secondary structures or improvements would be necessary for implementation of these mitigation measures. Therefore, there would be no significant secondary impacts on the environment from implementation of these mitigation measures.

Cultural Resources

Mitigation Measures CUL-1 through CUL-5 and CUL-9 establish protections for cultural resources primarily through monitoring and reporting, training of workers, and installing exclusionary fencing around the archaeological sites within or immediately adjacent to the proposed project access roads. These mitigation measures also include provisions for the protection of archeological resources or human remains should they be encountered. Mitigation Measure CUL-6 requires language specific to cultural resources to be included on the proposed signage to be installed at the boat launch and take out kiosks. Mitigation Measure CUL-7 requires the use of material from the site to be used to limit access outside the defined features of the project. Mitigation Measure CUL-8 requires that the County implement an annual site condition verification program to monitor the conditions of known archaeological sites and the implementation of further protection if determined to be necessary. The mitigation measures ensure that resources would not be damaged or harmed consistent with State CEQA Guidelines and regulations that provide for the protection of such resources. No construction of secondary structures or off-site improvements would be necessary for their implementation. There would be

no significant secondary impacts on the environment from implementation of these mitigation measures.

Geology and Soils

Mitigation Measures GEO-1 through GEO-4 establish protections for paleontological resources primarily through monitoring, reporting, and training of workers. These measures also include provisions for the protection of paleontological resources, should they be encountered. The mitigation measures ensure that resources would not be damaged or harmed consistent with State CEQA Guidelines and regulations that provide for the protection of such resources. No construction of secondary structures or improvements would be necessary for their implementation. There would be no significant secondary impacts on the environment from implementation of these mitigation measures.

Hydrology and Water Quality

Mitigation Measures HYD-1a, HYD-1b, and HDY-2 would ensure impacts to the hydrology and water quality of the Lower Owens River would be minimized through implementation of in-stream best management practices (BMPs) geared towards reducing pollution, sediment loading, and sustaining dissolved oxygen; installing trash receptacles to aid in keeping trash out of the river and surrounding floodplain; and implementation of construction BMPs for floodplain erosion management. These mitigation measures would ensure that hydrologic and water quality resources would not be damaged or harmed with project implementation consistent with State CEQA Guidelines and regulations that provide for the protection of such resources. No construction of secondary structures or improvements would be necessary for their implementation. There would be no significant secondary impacts on the environment from implementation of these mitigation measures.

CHAPTER 6
References

Chapter 2: Project Description

National Park Service, 2004. Logical Lasting Launches, National Park Service River, Trails, and Conservation Assistance Program.

River Management Society, 2017. Prepare to Launch: Guidelines for Assessing, Designing, and Building, Access Sites for Carry-in Watercraft. https://www.river-management.org/prepare-to-launch

United States Access Board, 2014, Outdoor Developed Areas, a summary of accessibility standard for Federal outdoor developed areas.

Chapter 3: Environmental Setting, Impacts, and Mitigation Measures

California Department of Transportation (Caltrans), 2018. *Caltrans District 9 Projects.* http://www.dot.ca.gov/d9/projmgt/projects.html. Accessed November 2, 2018.

County of Inyo, 2018. *County of Inyo Environmental Filings.* https://www.inyocounty.us/EnvironmentalDocuments/EnvDocs.php. Accessed November 2, 2018.

Dermody, Lori, 2018. Personal Communication with Lori Dermody, Watershed Resources Supervisor at Los Angeles Department of Water and Power. November 19, 2018.

Joseph, Mel O., 2018. Personal Communication with Mel O. Joseph, Environmental Director at the Lone Pine Paiute-Shoshone Reservation.

Richards, Cathreen, 2018. Personal Communication with Cathreen Richards, Planning Director at the Planning Department for the County of Inyo.

Southern California Edison (SCE), 2018. Fact Sheet Ivanpah-Control Project – San Bernardino, Kern, and Inyo County.

Section 3.1 Aesthetics

California Department of Transportation (Caltrans), 2018. *California Scenic Highway Mapping System – Inyo County*. Accessed November 19, 2018. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/.

County of Inyo, 2001. *County of Inyo General Plan.* Accessed November 27, 2018. http://inyoplanning.org/general_plan/index.htm

———, 2013. *County of Inyo Draft General Plan and Zoning Code Update.* Accessed November 27, 2018. http://inyoplanning.org/projects/GPandZoningUpdates.htm

———, 2018. *County of Inyo Zoning Code.* Accessed November 26, 2018. http://www.qcode.us/codes/inyocounty/

United States Geologic Survey (USGS), 2017. *Evaluation of the Hydrologic System and Selected Water-Management Alternatives in the Owens Valley, California.* Accessed November 26, 2018. https://ca.water.usgs.gov/owens/report/desc.html.

Section 3.2 Air Quality

California Air Resources Board. 2019. Top 4 Summary. Available: https://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed January 2019.

_____. 2017a. Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2019

_____. 2017b. Area Designations Maps/ State and National. https://www.arb.ca.gov/desig/adm/adm.htm. Accessed January 2019.

_____. No Date [a]. Ozone & Health, Health Effects of Ozone, https://ww2.arb.ca.gov/resources/ozone-and-health. Accessed January 8, 2018.

_____. No Date [b]. Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health. Accessed January 2019.

_____. No Date [c], Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed January 2019.

_____. No Date [d]. Sulfur Dioxide & Health, https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health. Accessed January 2019.

_____. 2004. Final Regulation Order, Amendments to the California Diesel Fuel Regulations, Amend Section 2281, Title 13, California Code of Regulations, https://www.arb.ca.gov/regact/ulsd2003/fro2.pdf, approved July 15, 2004. Accessed January 2019.

Friant Ranch. 2015. Sierra Club v. County of Fresno (CA Supreme Court, S219783).

South Coast Air Quality Management District, CEQA Air Quality Handbook (1993)

_____. Cumulative Impacts White Paper, Appendix D, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4, accessed May 2017

_____. 2008. Final Localized Significance Threshold Methodology, (2008). Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed December 2018

_____. 2014 Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

_____. 2015 SCAQMD Air Quality Significance Thresholds, (March 2015), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed December 2018

_____. 2016. Communication with SCAQMD Staff, Jillian Wong (Planning and Rules Manager) and Michael Krause (Planning and Rules Manager), DTSC, and ESA PCR, August 26, 2016.

SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno

United States Environmental Protection Agency. 2019. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, https://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed January 2019.

_____. 2018a. Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed January 2019

_____. 2018b. Sulfur Dioxide (SO_2) Pollution, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics, last updated June 28, 2018. Accessed January 2019

_____. 2018c. Particulate Matter (PM) Pollution, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics, last updated November 14, 2018. Accessed January 2019.

_____. 2016a. Nitrogen Dioxide (NO_2) Pollution, https://www.epa.gov/no2-pollution/basic-information-about-no2, last updated September 8, 2016. Accessed January 2019.

_____. 2016b. Carbon Monoxide (CO) Pollution in Outdoor Air, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution, last updated September 8, 2016. Accessed January 2019

Section 3.3 Biological Resources

Banks, Rose and Patricia Moyer. 2019. California Department of Fish and Wildlife. Personal telephone communication with Maile Tanaka (Biologist) and Luci Hise-Fisher of ESA and Larry Frielich and Zach Nelson of Inyo County Water Department on May 1, 2019.

Buckmaster, Nick. 2018. California Department of Fish and Wildlife. Personal communication with Travis Marella (Biologist) of ESA on March 23, 2018.

Buckmaster, Nick. 2019a. California Department of Fish and Wildlife. Communication with Inyo County on February 19, 2019.

Buckmaster, Nick. 2019b. California Department of Fish and Wildlife. Communication with Inyo County on April 18, 2019.

Bureau of Land Management (BLM), Inyo National Forest, City of Los Angeles Department of Water and Power (LADWP), California Department of Fish and Game (CDFG). March 10, 1977 (Revised February 1, 1986). Owens Valley Tule Elk Habitat Management Plan.

CDFW. 2018a. California Natural Community List. Vegetation Classification and Mapping Program. January 24, 2018. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists.

CDFW. 2018b. Tule Elk. Website accessed November 30, 2018. https://www.wildlife.ca.gov/Conservation/Mammals/Elk/Tule-Elk.

CDFW. 2018c. Elk Occurrence Data. KML and Excel elk tracking data provided by Mike Morrison (Biologist with CDFW's Bishop Field Office) to Maile Tanaka (Biologist) of ESA on November 7, 2018

County of Inyo Water Department. September 25, 2014. Lower Owens River Water Quality Data Review. Memorandum Report.

County of Inyo Water Department. 2019. Personal communication with Maile Tanaka (Biologist) of ESA on January 7, 2019.

Coutant, C.C. 1975. Responses of bass to natural and artificial temperature regimens. Washington D.C.: Sportfishing Institute.

Ecosystem Sciences. 2012. Additional Information on Tules and Cattails as They Relate to the LORP.

Ecosystem Sciences. 2008. Lower Owens River Project: Monitoring, Adaptive Management and Reporting Plan.

Ecosystem Sciences and LORP MOU Consultants. 2014. Lower Owens River Project. Adaptive Management Recommendations.

Environmental Science Associates (ESA). 2019. Owens River Water Trail – Biological Technical Report. May 2019.

Environmental Science Associates (ESA). 2019. Owens River Water Trail – Hydraulic Analysis. October 2018 (Revised January 2019).

Google Earth. March 13, 201. 36°35'49.33" N, 118°01'52.95" W. Imagery Date: July 16, 2016.

Los Angeles Department of Water and Power (LADWP). March 7, 2019. *Owens River Water Trail Administrative Draft Environmental Impact Report Comment Letter*.

LADWP. August 2015. Habitat Conservation Plan for Los Angeles Department of Water and Power's Operation and Maintenance Activities on Its Land in Mono and Inyo Counties, California.

LADWP. 2002. Lower Owens River Beaver Dam Removal – Initial Environmental Study and Mitigated Negative Declaration.

LADWP and Ecosystem Sciences. April 28, 2010. Owens Valley Land Management Plan. http://www.inyowater.org/wp-content/uploads/2013/11/Owens-Valley-Land-Management-Plan-Final.pdf.

LADWP and Inyo County. October 2018a. Draft Lower Owens River Project 2018 Annual Report.

LADWP and Inyo County. May 2018b. Lower Owens River Project Drone Aerial Imagery.

LADWP and Inyo County. March 2018c. *Lower Owens River Project Annual Report 2017.*

LADWP and U.S. Environmental Protection Agency (EPA). June 23, 2004. Final Environmental Impact Report & Environmental Impact Statement. Lower Owens River Project, Inyo County, California.

Lewis, W.M., and S. Flickinger. 1967. Home range tendency of the bass. Ecology 48: 1020-1023,

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

Morrison, Mike. 2018. California Department of Fish and Wildlife. Personal communication via telephone with Maile Tanaka (Biologist) of ESA on November 7, 2018.

Moyle, Peter. 2002. Inland Fishes of California, Revised and Expanded. University of California Press. Berkeley and Los Angeles, California.

Penrod, K., R. Hunter, and M. Merrifield. 2001. Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings. Co-sponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, CA.

University of California, Riverside. 2019. *Quagga & Zebra Mussels*. Center for Invasive Species Research. https://cisr.ucr.edu/quagga_zebra_mussels.html. Website accessed on March 12, 2019.

U.S. Department of the Interior. U.S. Geological Survey. 2019. *Nonindigenous Aquatic Species Database: Point Map - Quagga Mussel.* Website accessed May 3, 2019. https://nas.er.usgs.gov/viewer/omap.aspx?SpeciesID=95.

USFWS. 2018a. Critical Habitat Portal. Accessible online at: http://ecos.fws.gov/crithab/.

USFWS. 2018b. National Wetland Inventory. https://www.fws.gov/wetlands/data/Mapper.html.

Section 3.4 Cultural Resources

Basgall, Mark E. and Kelly R. McGuire. 1988. *The Archaeology of CA-INY-30: Prehistoric Culture Change in the Southern Owens Valley, California*. Report on file, California Department of Transportation, Bishop.

Bethard, K. R. 1996. *Archaeological Site Record for P-14-000035*. On file at the Eastern Information Center, University of California, Riverside.

Bettinger, Robert L. 1976. The Development of Pinyon Exploitation in Central Eastern California. *The Journal of California Anthropology* 3:81-95.

———. 1977. Aboriginal Human Ecology in Owens Valley: Prehistoric Change in the Great Basin. *American Antiquity* 42:3-17.

———. 1989. The Archaeology of Pinyon House, Two Eagles and Crater Middens: Three Residential Sites in Owens Valley, Eastern California. *Anthropological Papers of the American Museum of Natural History* 65.

———. 1994. How, When and Why Numic Spread. In: *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D.B. Madsen and D. Rhode, pp. 44-55. University of Utah Press, Salt Lake City.

Bettinger, Robert L. and R.E. Taylor. 1974. Suggested Revisions in Archaeological Sequences of the Great Basin and Interior Southern California. *Nevada Archaeological Survey Research Papers* 5:1-26.

Borden, Ferris W. 1971. The Use of Surface Erosion Observations to Determine Chronological Sequence in Artifacts from a Mojave Desert Site. Archaeological Survey Association of Southern California, Paper No. 7.

Buol, S.W., Hole, F.D., McCracken, R.J., and Southard, R.J. 1997. *Soil Genesis and Classification.* 4th Edition. Iowa State University Press, Ames, IA.

California Geological Survey (CGS). 2018. Geologic Map of California. Electronic resource, https://maps.conservation.ca.gov/cgs/gmc/, accessed November 9, 2018.

Clements, Linda L. 2016. *History of the Carson and Colorado Railroad (With Dayton Emphasis)*. Electronic resources, daytonnvhistory.org/cc_history_llc.pdf, accessed July 3, 2018.

Denardo, Carole, Rachael Greenlee, and Henry Davis. 2010. *Draft Report Cultural Resources Survey for LADWP's Water Pipeline Installation from Well V817 to LAA1, Rose Valley, Inyo County, California,* prepared for LADWP.

Des Lauriers, Matthew R., Gerrit L. Fenenga, Gwyn Alcock and Richard Des Lauriers. 1997. *Obsidian Hydration and the Paleoindian Occupation of the Rose Valley Site (CA-Iny-1799).* Paper presented at the annual Kelso Conference on Mojave Desert Prehistory, Ocotillo.

Dice, Michael. 2014. *Primary Record for P-14-012883*. On file at the Eastern Information Center, University of California, Riverside.

DiPol, Jon. 2012. *Owens Valley History: History of the El Camino Sierra*. Electronic Document http://www.owensvalleyhistory.com/el_camino_sierra/page76a.html, accessed November 5, 2012.

Gobalet, K. and R. Negrini. 1992. Evidence for Endemism in Fossil Tui Chub, *Gila bicolor*, from Pleistocene Lake Chewaucan, Oregon. Copeia 1992: 539-544.

Greene, L.W. 1983. *Historic Resource Study: A History of Land Use In Joshua Tree National Monument.* U.S. Department of the Interior National Park Service, Washington, D.C.

Historicaerials.com. 2018. Historic aerial photographs for the years 1944, 1947, 1993, and 2010. Electronic resource, https://www.historicaerials.com/viewer, accessed December 4,2018.

Horne, Melinda C., and Dennis P. McDougall. 2003. *Cultural Resources study for the City of Riverside General Plan 2025 Update Program EIR*. Prepared for Cotton Bridges and Associates Urban and Environmental Consultants, on behalf of the City of Riverside Planning Department, prepared by Applied Earthworks, Inc.

Johnson, John R., Thomas W. Stafford, Jr., Henry O. Ajie, and Don P. Morris. 2002. Arlington Springs Revisited. *Proceedings of the Fifth California Islands Symposium*, edited by David R. Brown, Kathryn C. Mitchell and Henry W. Chaney, pp. 541–545. Santa Barbara Museum of Natural History, Santa Barbara.

Los Angeles Department of Water and Power (LADWP). 2012. *History and Facts of the Los Angeles Aqueduct.* Electronic document, http://www.ladwp.com/ladwp/cms/ladwp001006.jsp, accessed February, 2012.

McCoy, R.A. and A.T. Thomas. 1987. Water Development for Los Angeles, competition for scarce resources: A Case Study, in *Water for the Future: Water Resources Developments in Perspective*, edited by Walter O. Wunderlich and J. Egbert Prins, A.A. Balkema, Rotterdam.

McLeod, S. 2018. P*aleontological Records Search for the proposed Owens River Water Trail Project, Project #D170794.00*, near Lone Pine, Inyo County, Project Area. Records search prepared by the Los Angeles County Natural History Museum for Environmental Science Associates.

Meltzer, David J., Donald K. Grayson, Gerardo Ardila, Alex W. Barker, Dena F. Dincauze, C. Vance Haynes, Francisco Mena, Lautaro Nuñez, and Dennis J. Stanford. 1997. On the Pleistocene Antiquity of Monte Verde, Southern Chile. *American Antiquity* 62(4):659-663.

Meyer, Jack, D. Craig Young, and Jeffrey S. Rosenthal. 2010. *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* EA 06-0A7408 TEA Grant. Prepared by Far Western Anthropological Research Group, Davis, CA. Prepared for California Department of Transportation, District 6, Fresno, CA.

Mone, Sheila and Martha Proctor. 1984. *Archaeological Site Record for P-14-000035*. On file at the Eastern Information Center, University of California, Riverside.

Moratto, Michael J. 1984. *California Archaeology*. Academic Press, San Diego.

Natural Resources Conservation Service (NRCS). 2015a. Cajon Series. Electronic resource, https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CAJON.html, accessed December 7, 2018.

——. 2015b. Eclipse Series. Electronic resource, https://soilseries.sc.egov.usda.gov/OSD_Docs/E/ECLIPSE.html, accessed December 7, 2018.

——. 2016. Mazourka Series. Electronic resource, https://soilseries.sc.egov.usda.gov/OSD_Docs/M/MAZOURKA.html, accessed December 7, 2018.

——. 2018. *Web Soil Survey.* Electronic resource, http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed December 7, 2018.

Parr, Robert E., R. Scott Baxter, Matthew Des Lauriers, Claudia Garcia-Des Lauriers, Jill Gardner, and Robert M. Yohe II. 2001. *Archaeological Survey Report: Cartago-Olancha Four-Lane Project, U.S. Route 395, Inyo County, California*. Report on file at the Eastern Information Center, University of California, Riverside.

Reheis, M., S. Sine, and A. Sarna-Wojcicki. 2002. *Drainage Reversals in Mono Basin During the Late Pliocene and Pleistocene*. GSA Bulletin 114:991–1006.

Riddell, Harry S. 1951. The Archaeology of a Paiute Village Site in Owens Valley. *Reports of the University of California Archaeological Survey* 12:14-28.

Riddell, H. 1949. *Site Survey Record for P-14-000035*. On file at the Eastern Information Center, University of California, Riverside.

———. 1950a. *Site Survey Record for P-14-000068*. On file at the Eastern Information Center, University of California, Riverside.

———. 1950b. *Site Survey Record for P-14-000081*. On file at the Eastern Information Center, University of California, Riverside.

———. 1951. *Site Survey Record for P-14-000304*. On file at the Eastern Information Center, University of California, Riverside.

———. 1952a. *Site Survey Record for P-14-000308*. On file at the Eastern Information Center, University of California, Riverside.

———. 1952b. *Site Survey Record for P-14-000309*. On file at the Eastern Information Center, University of California, Riverside.

———. 1952c. *Site Survey Record for P-14-000310*. On file at the Eastern Information Center, University of California, Riverside.

Stone, P., G. Dunne, J. Moore, and G. Smith. 2000. *Geologic map of the Lone Pine 15-minute Quadrangle, Inyo County, California*. U.S. Geological Survey, Geologic Investigations Series Map I-2617. Scale 1: 62,500.

Sutton, Mark Q. 1986. Warfare and Expansion: An Ethnohistoric Perspective on the Numic Spread. *Journal of California and Great Basin Anthropology* 8:65-82.

———. 1994. The Numic Expansion as Seen from the Mojave Desert. In: *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D.B. Madsen and D. Rhode, pp. 133-140. University of Utah Press, Salt Lake City.

Sutton, Mark Q., Mark E. Basgall, Jill K. Gardner, and Mark W. Allen. 2007. Advances in understanding Mojave Desert Prehistory. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp 229-245.

Warren, C.N. 1984. The Desert Region. In *California Archaeology*, Coyote Press, Salinas, California.

Warren, Claude N. and Robert H. Crabtree. 1986. Prehistory of the Southwestern Area. In: *Handbook of North American Indians*, Vol. 11, Great Basin, edited by W.L. d'Azevedo, pp. 135-148. Smithsonian Institution, Washington, D.C.

Westbrook, Janet. 2011. Some History of the Indians Wells Valley and Surrounding Areas in Kern, Inyo, and Mono Counties. Electronic document, http://www.maturango.org/janetmuseumpages/historydates/History_dates.html, accessed November 5, 2012.

Wilke, Philip J. 1983. An Archaeological Assessment of Certain Sites on Lower Cottonwood Creek, Inyo County, California. Report on file at the Inyo National Forest, Bishop, California.

Yohe, Robert M., II. 1992. *A Reevaluation of Western Great Basin Cultural Chronology and Evidence for the Timing of the Introduction of the Bow and Arrow to Eastern California Based on New Excavations at the Rose Spring Site (CA-Iny-372)*. Ph.D. dissertation, University of California, Riverside.

Zelazo, E. and J. Minor. 2007. *Primary Record for P-14-009230*. On file at the Eastern Information Center, University of California, Riverside.

Section 3.5 Geology and Soils

California Geologic Survey (CGS). 2002. California Geomorphic Provinces: Note 36. December.

_____. 2016. Regulatory Maps Geo Application: Earthquake Fault Zones. http://maps.conservation.ca.gov/cgs/EQZApp/

Environmental Science Associates (ESA). 2018a. Owens River Water Trail Project Cultural Resources Assessment Report. 2019

_____. 2018b. Owens River Water Trail Project, Geomorphic Assessment. October 8, 2018.

Gobalet, K. and R. Negrini. 1992. Evidence for Endemism in Fossil Tui Chub, *Gila bicolor*, from Pleistocene Lake Chewaucan, Oregon. Copeia 1992: 539-544.

Hershler, R., and A. Jayko. 2009. A Mactrid Bivalve from Pleistocene Deposits of Lake Russell, Mono Basin, California. *Journal of Paleontology* 83:496–499.

Inyo County. 2001. Inyo County General Plan Public Safety Element. Available at http://inyoplanning.org/general_plan/goals.htm

Inyo County. 2016. Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan. Available at http://www.inyoplanning.org/documents/InyoCountyMJHMPPublicDraft_Public_2016.07.26.pdf. Accessed October 29, 2018.

Los Angeles Department of Water and Power (LADWP). 2010. Owens Valley Land Management Plan. April 28, 2010.

Reheis, M., S. Sine, and A. Sarna-Wojcicki. 2002. *Drainage Reversals in Mono Basin During the Late Pliocene and Pleistocene*. GSA Bulletin 114:991–1006.

Stone, P., G. Dunne, J. Moore, and G. Smith. 2000. *Geologic map of the Lone Pine 15-minute Quadrangle, Inyo County, California*. U.S. Geological Survey, Geologic Investigations Series Map I-2617. Scale 1: 62,500.

Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Electronic resource, http://www.vertpaleo.org/Impact_Mitigation_Guidelines.htm, accessed November 1, 2018.

United States Department of Agriculture (USDA). 2018. Natural Resource Conservation Service: Web Soils Survey. Available at https://websoilsurvey.nrcs.usda.gov/app/. Accessed October 25, 2018.

United States Geological Survey (USGS). 1982. The Owens Valley Fault Zone, Eastern California, and Surface Faulting Associated with the 1872 Earthquake. Available at https://pubs.usgs.gov/bul/1982/report.pdf. Accessed October 25, 2018.

_____. 2006. Factors of Liquefaction. Available at https://geomaps.wr.usgs.gov/sfgeo/liquefaction/factors.html. Accessed October 29, 2018.

Section 3.6 Greenhouse Gas Emissions

Anderegg, William R. L., J.W. Prall, J. Harold, S.H., Schneider, Expert Credibility in Climate Change, Proceedings of the National Academy of Sciences of the United States of America. 2010;107:12107-12109

Biodiesel Magazine, Court rules against CARB on LCFS, preserves 2017 status quo, April 17, 2017

California Air Pollution Control Officers Association 2008. CEQA & Climate change: Evaluating and Addressing Greenhous Gas Emissions from projects Subject to the California Environmental Quality Act.

California Air Resources Board (CARB). 2005. Regulations to Control Greenhouse Gas Emissions from Motor Vehicles, Final Statement of Reasons. Available at: https://www.arb.ca.gov/regact/grnhsgas/fsor.pdf. Accessed June 2017

_____. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets For Automobiles And Light Trucks Pursuant To Senate Bill 375.

_____. 2011. Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, August 19.

_____. 2014. 2020 Business-as-Usual (BAU) Emissions Projection, 2014 Edition. Available at: http://www.arb.ca.gov/cc/inventory/data/bau.htm. Accessed May 2017

_____. 2016. Frequently Asked Questions for the 2016 Edition California Greenhouse Gas Emission Inventory. Available: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_faq_20160617.pdf. Accessed May 2017

_____. 2017a. 1990 to 2004 Inventory Data and Documentation (2017). Available: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed January 2019

_____. 2017b. California's 2017 Climate Change Scoping Plan, November 2017. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed January 2018

_____. 2017c. Advanced Clean Cars Summary. Available at: http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf. Accessed May 2017

_____. 2018. California Greenhouse Gas Inventory - 2018: https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed January 2019

California Building Standards Commission. 2010. 2010 California Green Building Standards Code.

_____. 2016. CALGreen (Part 11 of Title 24), http://www.bsc.ca.gov/Home/CALGreen.aspx. Accessed June 2017.

California Climate Change Center. 2006. Our Changing Climate: Assessing the Risks to California.

California Department of Finance. 2017. Gross State Product. Available at: http://dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/. Accessed June 2017. Amounts are based on current dollars as of the date of the report (May).

_____. 2017b. E-5 Population and Housing Estimates for Cities, Counties and the State, January 1, 2011-2017, with 2010 Benchmark, http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed January 2019.

California Department of Water Resources. 2006. Climate Change Report, Progress on Incorporating Climate Change into Planning and Management of California's Water Resources, July. http://baydeltaoffice.water.ca.gov/climatechange/

California Energy Commission. 2006. Scenarios of Climate Change in California: An Overview, February. http://www.energy.ca.gov/2005publications/CEC-500-2005-186/CEC-500-2005-186-SF.PDF. Accessed January 2019.

_____. 2016. Existing Buildings Energy Efficiency Plan Update, December. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/16-EBP-01/TN214801_20161214T155117_Existing_Building_Energy_Efficency_Plan_Update_Deceber_2016_Thi.pdf. Accessed May 2017

California Environmental Protection Agency. 2006. Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature.

_____. 2010. California Climate Action Team Report to the Governor and the Legislature.

California Natural Resources Agency. 2009a. Climate Action Team, 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.

_____. 2009b. Final Statement of Reasons for Regulatory Action (December 2009), pp. 11-13, 14, 16; see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, April 13, 2009. Available at https://www.opr.ca.gov/docs/Transmittal_Letter.pdf. Accessed May 2017

_____. 2014. Safeguarding California: Reducing Climate Risk, an Update to the 2009 California Climate Adaptation Strategy. (2014). Accessed September 2017

Energy + Environmental Economics, Summary of the California State Agencies' PATHWAYS project: Long-term Greenhouse Gas Reduction Scenarios, April 6, 2015. Available at: https://www.arb.ca.gov/html/fact_sheets/e3_2030scenarios.pdf. Accessed January 2019.

Intergovernmental Panel on Climate Change. 1995. Second Assessment Report, Working Group I: The Science of Climate Change.

_____. 2007. Fourth Assessment Report, Working Group I Report: The Physical Science Basis.

_____. 2013. Fifth Assessment Report: The Physical Science Basis, Summary for Policy Makers.

Inyo County. 2001. General Plan. Available: http://www.inyoplanning.org/general_plan/index.htm

_____. 2012. County of Inyo Cost, Energy and Service Efficiencies Action Plan. Available: http://www.inyoplanning.org/plans_laws.htm.

_____. 2015. Renewable Energy General Plan Amendment. Available: http://www.inyoplanning.org/general_plan/index.htm.

National Research Council. 2010. Advancing the Science of Climate Change.

O'Brien, Salas. 2012. Energy Savings Analysis for County Greenhouse Gas Inventory Draft Report. July. Available http://inyoplanning.org/documents/CESEAP-DrftAnalyGHG-8.22.12.pdf. Accessed January 2019.

Governor's Office of Planning and Research, 2008. Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review.

Pacific Institute for Studies in Development, 2003. *Environment and Security, Climate Change and California Water Resources: A Survey and Summary of the Literature*. Accessed June 2017. http://www.esf.edu/glrc/library/documents/CaliforniaClimateChangeWaterResourcesLitReview_2003.pdf.

Parmesan, C., 2004a. *Ecological and Evolutionary Response to Recent Climate Change*.

_____. 2004b. *Observed Ecological Impacts of Climate Change in North America.* Arlington, VA: Pew. Cent. Glob. Clim. Change.

PBL Netherlands Environmental Assessment Agency and the European Commission Joint Research Center, 2016. *Trends in Global CO2 Emissions 2016 Report*. Accessed August 2017. http://www.pbl.nl/en/publications/trends-in-global-co2-emissions-2016-report.

South Coast Air Quality Management District, 2008. *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October.* Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2.

United Nations. 2016. *Framework Convention on Climate Change, Paris Agreement – Status of Ratification*. Accessed January 2019. http://unfccc.int/paris_agreement/items/9444.php.

United States Census Bureau, 2017. *1990 Census Apportionment Results*. Accessed June. https://www.census.gov/data/tables/1990/dec/1990-apportionment-data.html.

United States Environmental Protection Agency. 2011a. "*EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks*". http://www.epa.gov/oms/climate/documents/420f12051.pdf. 2012

_____. 2011b. *Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011*. Accessed January 2019. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF.

_____. 2012. *EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks*. Accessed January 2019. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

_____. 2016. *Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25*. Accessed January 2019. https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf.

Section 3.7 Hydrology and Water Quality

Dawson, B.J.M., and Belitz, Kenneth, 2012. *Groundwater Quality in the Owens Valley, California: U.S. Geological Survey Fact Sheet 2012–3032*.

Department of Water Resources, 2004. *Groundwater Basin Bulletin 118, South Lahontan Hydrologic Region, Owens Valley Groundwater Basin*. last update February 27

Digital Desert, 2019. *Lone Pine, CA.* Accessed March 12, 2019. http://digital-desert.com/lone-pine-ca/

Environmental Science Associates (ESA). 2019a. *Owens River Water Trail – Hydraulic Analysis*. October 2018 (Revised January 2019).

Environmental Science Associates (ESA). 2019b. *Owens River Water Trail Project, Geomorphic Assessment*. October 8, 2018, revised March 7, 2019.

Federal Emergency Management Agency (FEMA), 2011. *NFIP Flood Insurance Rate Map Number 06027C2200D*. August 16.

LADWP and Inyo County, 2015. *Lower Owens River Annual Report*. January, 2015.

____. *Lower Owens River Annual Report*. January, 2017.

____, 2018. *Lower Owens River Project, 2017 Annual Report*. March.

____, 2019. *Lower Owens River Project, 2018 Annual Report*. February.

Northwest Hydraulic Consultants (NHC), 2012. *Lower Owens River Project Hydraulic Model. Prepared for Los Angeles Department of Water and Power*, June 29.

Regional Water Quality Control Board (RWQCB), Lahontan Region, 2016. *Water Quality Control Plan for the Lahontan Region.* January 14.

State Water Resources Control Board (SWRCB), 2018. *2014/2016 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report).* Accessed March 12, 2019. https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml.

United States Geologic Survey (USGS), 2017. *Evaluation of the Hydrologic System and Selected Water-Management Alternatives in the Owens Valley, California.* USGS Water-Supply Paper 2370-H.

Section 3.8 Land Use and Planning

Digital Desert, 2018. *Lone Pine, CA.* Accessed November 5, 2018. http://digital-desert.com/lone-pine-ca/

City of Los Angeles Department of Water and Power (LADWP) and Ecosystem Sciences, 2010. *Owens Valley Land Management Plan.* Accessed November 27, 2018. http://www.inyowater.org/wp-content/uploads/2013/11/Owens-Valley-Land-Management-Plan-Final.pdf

City of Los Angeles Department of Water and Power (LADWP), 2015. *Habitat Conservation Plan.* Accessed November 16, 2018. https://www.fws.gov/carlsbad/HCPs/HCP_Docs.html

County of Inyo, 2001. *County of Inyo General Plan.* Accessed November 6, 2018. http://inyoplanning.org/general_plan/index.htm

———, 2013. *County of Inyo Draft General Plan and Zoning Code Update.* Accessed November 6, 2018. http://inyoplanning.org/projects/GPandZoningUpdates.htm

———, 2018a. *County of Inyo Public Maps and Data Download – Geographic Information Systems.* Accessed November 6, 2018. https://www.inyocounty.us/gis/GISPage_Data.htm

———, 2018b. *County of Inyo Zoning Code.* Accessed November 6, 2018. http://www.qcode.us/codes/inyocounty/

———, 2018c. *Lower Owens River Project.* Accessed November 6, 2018. http://www.inyowater.org/projects/lorp/

Section 3.9 Recreation

County of Inyo, 2001. *County of Inyo General Plan.* Accessed November 7, 2018. http://inyoplanning.org/general_plan/index.htm

———, 2013. *Lower Owens River Recreation Use Plan.* Accessed November 20, 2018. http://www.inyowater.org/wp-content/uploads/2017/08/Lower-Owens-River_Recreation-Use-Plan-DRAFT_011513.pdf

County of Inyo, Parks and Recreation Department, 2012. *Inyo County Parks and Recreation*. Accessed October 30, 2018. http://www.inyocountycamping.com/

Inyo County, 2019. *Water Department memorandum to Chairperson Genevieve Jones and Danelle Guiterrez*, THPO dated January 14, 2019.

Inyo County, Email correspondence with Eastern Sierra InterAgency Visitor Center Director, Matt Helt, January 23, 2017.

———, 2018. *General Camping Information*. Accessed December 10, 2018. https://www.inyocountycamping.com/general_camping_info.html

Department of the Interior, 2018. *Bureau of Land Management Bishop Field Office*. Accessed December 5, 2018. https://www.blm.gov/office/bishop-field-office.

———, 2018. *Alabama Hills*. Accessed December 5, 2018. https://www.blm.gov/visit/alabama-hills.

———, 2018. *Tuttle Creek Campground*. Accessed December 5, 2018. https://www.blm.gov/visit/search-details/15191/1.

Los Angeles Department of Water and Power, 2004. *Lower Owens River Projcet Final EIR/EIS*. Accessed December 5, 2018. http://www.inyowater.org/wp-content/uploads/legacy/LORP/DOCUMENTS/LORPFinalEIREIS.pdf

Paddling California, 2018. *Paddling the Lower Owens River*. Accessed November 20, 2018. http://www.paddlingcalifornia.com/articleowensriver.html

U.S. Census Bureau, 2017. *Quick Facts, Inyo County California*. Accessed November 26, 2018. https://www.census.gov/quickfacts/inyocountycalifornia.

U.S. Forest Service, 2017. *Inyo National Forest Visitor Guide*. Accessed December 5, 2018. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd550643.pdf.

Section 3.10 Tribal Cultural Resources

Parr, Robert E., R. Scott Baxter, Matthew Des Lauriers, Claudia Garcia-Des Lauriers, Jill Gardner, and Robert M. Yohe II. 2001. *Archaeological Survey Report: Cartago-Olancha Four-Lane Project, U.S. Route 395, Inyo County, California*. Report on file at the Eastern Information Center, University of California, Riverside.

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