

12.0 CUMULATIVE IMPACTS

12.1 CUMULATIVE IMPACT REQUIREMENTS

12.1.1 Cumulative Impacts Under CEQA

Section 15355 of the CEQA Guidelines defines cumulative impacts as two or more individual effects, that when considered together, are either considerable or compound other environmental impacts. These cumulative impacts are changes in the environment that result from the incremental impact of the proposed project and other nearby related projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Under CEQA Guidelines Section 15130, an EIR must discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," which means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Section 15065). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

12.1.2 Cumulative Impacts Under NEPA

NEPA requires that an Environmental Impact Statement (EIS) address the direct, indirect, and cumulative impacts of a proposed action. "Cumulative impact" is defined under the NEPA regulations (Section 1508.7) as the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The federal Council of Environmental Quality (1997) has provided guidance on how to address cumulative impacts under NEPA. The approach involves the following steps: (1) identify the significant cumulative effects issues associated with the proposed action and define the assessment goals and establish the geographic scope for the analysis; (2) identify other actions affecting the environment; (3) characterize other impacts affecting these resources; and (4) determine the magnitude and significance of cumulative effects. This approach is used below to assess the potential cumulative impacts of the proposed project.

12.2 ENVIRONMENTAL IMPACTS OF THE LORP

The potentially significant impacts associated with the proposed project are listed below:

Class I Impacts (Significant and Unmitigable)

1. During the first several years of the project, the baseflows and seasonal habitat flows could degrade water quality along the river, primarily downstream of Mazourka Canyon Road. The interactions of increased flows with organic sediments in the channel may reduce dissolved oxygen levels and increase hydrogen sulfide, ammonia, and methane levels. These impacts would be minimized to the extent feasible by flow management actions, but cannot be entirely avoided.

2. The temporary adverse water quality conditions during the initial releases to the river could adversely affect fish due to the depletion of oxygen, and possible increase in hydrogen sulfide, methane, and ammonia. The poor water quality could cause fish kills along the river downstream of Mazourka Canyon Road. Both the 40 cfs baseflow and the seasonal habitat flows of up to 200 cfs could potentially cause water quality degradation. The fishery is expected to recover once water quality conditions improve.

Class II Impacts (Significant, but Mitigable)

1. Flows in the Lower Owens River could cause localized overbank flooding at several public roads and lease roads that cross the river if dislodged debris and sediments clog culverts and bridges at these crossings. This impact may occur at the initiation of the project and under the seasonal habitat flows. LADWP and Inyo County will monitor these crossings and remove accumulated debris to minimize flooding.
2. Clearing the river channel downstream of the River Intake to remove channel obstructions will require the establishment of several temporary construction access roads in native upland habitats. These roads would be removed after the operation and restored to pre-construction grade and vegetative conditions.
3. Implementation of an adaptive management measure to mechanically remove cattail and bulrush stands that are significantly impeding the goals of the LORP would require access routes to the wetted channel for equipment, staging areas for truck and equipment maneuvering, and a temporary dewatering site. Establishment of these temporary work areas could disturb wetland and riparian vegetation.
4. The construction of the pump station would temporarily disturb about 22 acres of upland vegetation due to equipment staging, overland travel between work areas, and construction of the service roads. These areas would be restored after construction.
5. Construction of various berms and ditches in the Blackrock Waterfowl Area could facilitate colonization by non-native weeds, particularly perennial pepperweed and saltcedar. This impact will be avoided by post-construction seeding with native plants and weed control to prevent an infestation of exotics.
6. Rewatering the Lower Owens River and supplying water to the Delta and to the Blackrock areas could potentially increase the distribution and abundance of perennial pepperweed, Russian knapweed, and other noxious plants. This impact will be mitigated by monitoring and treating existing and new infestations through the Agricultural Commissioner's office.
7. There is a potential to encounter previously unrecorded archeological deposits or sites during the earthmoving activities associated with pump station and power line. This impact would be reduced or avoided by construction monitoring by an archeologist.
8. One of the proposed ditches in the Blackrock Waterfowl Area will be located in proximity to an archeological site, which could be disturbed during construction. Disturbance to the site will be avoided by installing a temporary fence during construction work.
9. Construction of temporary access roads to conduct the river channel clearing below the River Intake could disturb archeological sites. This impact will be avoided by locating the temporary

access roads around the sites and installing temporary protective fencing to prevent inadvertent disturbances from heavy equipment or sediment spoil from intruding onto the sites.

10. The implementation of an adaptive management measure to mechanically remove limited stands of cattails and bulrush along the river could affect nesting birds if it occurs in the spring and early summer. This impact can be avoided by scheduling removal for the fall months.
11. The rewatering of the river would create new wetted channel areas, including areas that are barren and could cause saltcedar infestation in these and other areas. The supplying of water to the Delta and to the Blackrock areas could create additional areas for the colonization of saltcedar. This impact will be mitigated by implementing measures to minimize new infestations, monitoring of areas that are to undergo a change in hydrologic status, and treatment of new and existing infestations through the Inyo County Saltcedar Control Program.
12. The LORP will result in hundreds of acres of new open water and marsh habitats along the river, in the Blackrock Waterfowl Habitat Area, and at the Delta Habitat Area. These new habitats would provide more opportunities for mosquitoes to breed, which could result in increased nuisance and public health risk to communities and residents near these areas. This impact will be mitigated by monitoring, treating and, when possible, adjusting management to reduce mosquito sources within the LORP that threaten nearby communities.

Class III Impacts (Less than Significant)

1. Over time, the rewatering of the river is predicted to convert about 2,343 acres of alkali scrub/meadow (an upland vegetation) and 531 acres of alkali meadow (upland phase) to various wetland and riparian vegetation types due to inundation effects and altered hydrologic conditions along the river. This habitat conversion is unavoidable because the LORP cannot be accomplished without this conversion.
2. Removal of channel sediments in the river immediately downstream of the River Intake prior to the release of water could cause temporary downstream water quality impacts.
3. Infrequent removal of tule and cattail stands could cause temporary downstream water quality impacts.
4. Construction of the pump station and maintenance dredging of the forebay could cause temporary downstream water quality impacts.
5. There is a potential for cattails and tules to proliferate and reduce quality of wildlife habitat along the river.
6. Potential loss of stand of riparian forest at the pump station forebay due to flooding during operations.
7. Initial channel clearing will result in the loss of emergent wetlands along the river.
8. Construction of the pump station will result in temporary and permanent losses of upland and wetland habitats.
9. Construction activities in Blackrock would result in temporary and permanent losses of upland and wetland habitats.

10. Construction activities for all LORP elements would cause temporary air quality impacts.
11. The initial rewatering will cause off-gassing from organic sediments that cause unpleasant odors.
12. New land management on LADWP leases could increase cattle drift on BLM and SLC lands.
13. The LORP may cause increased recreation, which could adversely affect cultural and natural resources.

12.3 PROJECTS CONSIDERED FOR POTENTIAL CUMULATIVE IMPACTS

Past, present, and reasonably foreseeable projects in and near the LORP project area are briefly described below.

Owens Lake Dust Mitigation Program – LADWP

In 1998, the Great Basin Unified Air Pollution Control District (GBUAPCD) adopted a State Implementation Plan (SIP) for the Owens Lake PM10 Planning Area, which identifies dust control measures to be implemented by LADWP on the Owens Dry Lakebed. Dust control measures include the use of shallow flooding, vegetated areas, and gravel layers to reduce dust emissions over 35 square miles of the lake. In December 2001, LADWP began shallow flooding 11.9 square miles (7,639 acres) in an area along the northeast part of Owens Dry Lake referred to as Zone 2 (northeastern portion of the lake, immediately adjacent to the Delta Habitat Area; see Figure 6-1). By 2003, the Dust Mitigation Program included 15.4 square miles (9,823 acres) of shallow flooding. Shallow flooding areas are operated between October 1 and June 30 each year. In addition, as part of the CDFG Streambed Alteration Agreement for dust control activities in the southern portion of the lake, LADWP has committed to maintaining 1,000 acres of shorebird habitat within Zone 2 shallow flood area and up to 1,000 acres of additional shorebird habitat using naturally occurring water.

Owens Lake Groundwater Pumping Project

Since 1999, LADWP has been studying the feasibility of pumping from a confined aquifer beneath Owens Lake to supply a portion of the water required for the dust control project. The pumping would be bound by the requirements of the 1991 Inyo County/Los Angeles Long Term Agreement (Agreement). The results of the preliminary study, the Owens Lake Groundwater Evaluation, indicated further information was needed before conclusions on the amount of water available could be made. At this time, LADWP plans to collect this additional information and then evaluate the feasibility of this project.

Owens Basin Wetland and Aquatic Species Recovery Plan

USFWS (1998) prepared the Owens Basin Wetland and Aquatic Species Recovery Plan to describe actions necessary to restore the populations and enhance habitat for three federally listed species that occur in the Owens Valley – Owens pupfish, Owens tui chub, and Fish Slough milk-vetch. The plan also identifies conservation actions and programs to serve as a foundation for future Habitat Conservation Plans (HCPs) for these species, as well as several others that could be listed in the future – Owens Valley vole, Owens Valley speckled dace, Long Valley speckled dace, Owens Valley springsnail, Fish Slough springsnail, Owens Valley checkerbloom, and Inyo County mariposa lily. The plan describes various Conservation Areas to be established in the valley to achieve recovery of these species. This plan has not been implemented. CDFG prepared a companion plan, entitled Owens Basin Sensitive Wetland and Aquatic Species Management Guidelines Plan, which included various management actions and

guidelines that would protect and enhance all species of special concern in the Owens Valley that were not include in the USFWS plan. The CDFG plan does not include specific projects. USFWS also prepared a recovery plan for the endangered southwestern willow flycatcher, which occurs in the LORP project area (USFWS, 2001). The Plan identifies priorities for conserving riparian habitat areas, including several along the Lower Owens River.

Habitat Conservation Plan for LADWP Lands in the Owens Valley

Under the MOU, LADWP is required to prepare watershed management plans for all of its lands in the Owens Valley. LADWP is required to commence the plans by June 2003 and to complete the plans by June of 2008. As part of the development of these plans, LADWP is identifying management activities that may affect special status species, including federally listed threatened and endangered species. Once these management activities have been identified, LADWP will work with the USFWS and CDFG to develop a valley-wide HCP.

Projects Required Under the Inyo County/Los Angeles Long Term Water Agreement

In October 1991, Inyo County and LADWP approved the Inyo County/Los Angeles Long Term Water Agreement (Agreement). The overall goal of the Agreement is to manage the water resources within Inyo County “...to avoid certain described decreases and changes in vegetation and to cause no significant effect on the environment which cannot be acceptably mitigate while providing a reliable supply of water for export to Los Angeles and for use in Inyo County.” In addition to providing a framework for the management of groundwater and surface water in the Owens Valley, the Agreement includes various projects and programs. A summary of the projects in the Agreement is provided below.

- **Groundwater Management.** Inyo County and LADWP must manage water resources to avoid certain described changes in vegetation and to cause no significant effect on the environment, which cannot be acceptably mitigated while providing a reliable water supply for export to Los Angeles, and for in-valley uses. A groundwater management program has been implemented in which groundwater levels and the condition of vegetation are monitored, and groundwater pumping is modified based on monitoring results as relevant. LADWP must submit an Annual Operations Plan that describes the proposed operations for the upcoming year. The Plan must take into account groundwater levels and effects on vegetation. The groundwater management plan must be consistent with the goal of the Agreement.
- **New Wells and Production Capacity.** In order to provide for increased operational flexibility and to facilitate rotational pumping, LADWP may replace existing wells and construct new wells in areas where hydrogeologic conditions are favorable and where operations of such wells will not cause a change in vegetation that would be inconsistent with the Agreement. The Agreement provides for up to 15 new wells. In order to install a new or replacement well, a prescribed technical review process must be completed by LADWP and Inyo County to ensure compliance with the Agreement and to avoid any significant environmental impacts. LADWP had installed a total of 10 wells (eight replacement and two new wells) as of 2002. Future plans include the replacement of old wells and the installation of new wells identified in the Agreement and as needed for operational flexibility.
- **Groundwater Recharge Project.** LADWP may construct groundwater banking and recharge facilities. Potential sites are located in the towns of Laws and Big Pine. At the present time, LADWP has not pursued groundwater recharge facilities in the Laws area. The feasibility of this project will be evaluated before the project is implemented. LADWP has worked with Caltrans in conjunction with the Highway 395 widening in the Big Pine area to install additional diversion

capacity for recharge off of the Big Pine Canal to the west of Highway 395, as identified in the Agreement and 1991 EIR.

- Enhancement/Mitigation Projects. All existing E/M projects implemented between 1985 and 1990 must continue, unless the Standing Committee agrees to modify or discontinue a project. These projects include the Millpond Recreation Area Project, Shepherd Creek Alfalfa Lands Project, Klondike Lake Project, Laws Historic Museum Project, Laws-Poleta Native Pasture Project, McNally Ponds Project, Independence Pasture Lands and Spring Field Project, Lone Pine Riparian Park, Lone Pine Sports Complex, Independence Roadside Rest, Eastern California Museum, and Town Regreening Projects, and Lower Owens River Rewatering Project (this project will be replaced with the LORP).
- Town Water Systems. LADWP will transfer to Inyo County or some other public agency, ownership of the water systems in Lone Pine, Independence, and Laws. Prior to the transfer, certain work will be completed to upgrade the systems. LADWP will provide up to 1,030 acre-feet per year to the towns free of charge. This transfer is in the process of being fully completed.
- Saltcedar Control. LADWP will continue to provide funds to Inyo County to maintain and control a salt cedar control program (\$750,000 was provided during the first three years, and \$50,000 per year thereafter). Inyo County initiated the program in 1999. It includes a comprehensive effort to manage saltcedar throughout the Owens Valley, concentrating during the initial years on saltcedar populations in the LORP project area.
- Park Rehabilitation, Development, and Maintenance. LADWP is providing \$2 million to Inyo County to rehabilitate existing county parks and campgrounds and to develop new recreation facilities. Projects completed to date include:
 - Installation of Americans with Disabilities Act (ADA) compliance drinking fountains at various parks
 - Construction of a new shop building at Diaz Lake
 - Construction of a new entrance station at Diaz Lake
 - Provision of electrical power at Pleasant Valley Campground
 - Construction of a new fee station at Pleasant Valley Campground
 - Provision of electrical power to Tinnemaha Campground
 - Construction of new toilets at various campgrounds
 - Installation on new shade ramadas and ADA compliant picnic tables at Diaz Lake
 - Upgrade of water system at Diaz Lake

Projects in progress include:

- Construction of new playground equipment at Millpond
- Installation of new signage at Millpond
- Rehabilitation of seven tennis courts at various locations
- Rehabilitation of Lone Pine Park including renovation of the Little League field, new restrooms, new playground equipment, installation of ADA compliant pathways, construction of a gazebo, construction of horseshoe pits, construction of ADA compliant picnic area, paving of the parking area, installation of fencing, new irrigation system, foot bridge, ADA compliant drinking fountains and a roller blade area
- Rehabilitation of Dehy Park including expansion of the park area, construction of a visitor's center, new parking area, playground equipment, gazebo, foot bridges, interpretive trail, ADA

compliant drinking fountains, food court, new lawn area, irrigation system, ADA compliant pathways, horseshoe pits, basketball court and perimeter fencing, planting of new trees

In addition, LADWP provides approximately \$100,000 per year to Inyo County for maintenance costs. As part of the funding provided for the parks rehabilitation program, Inyo County may develop a plan for recreational use and management of the Owens River from Pleasant Valley Reservoir to the Owens River Delta. At present, the County does not anticipate the development of such a plan.

- Big Pine Ditch System. LADWP will provide up to \$100,000 for the reconstruction and upgrading of Big Pine ditch system, and provide up to six cfs to the ditch system from a new well to be constructed west of Big Pine. Currently LADWP and the County are working to determine the water supply source for the project.
- Release of Los Angeles-owned Lands. LADWP will offer 75 acres of land for sale in designated areas of the Owens Valley. The County is in the process of identifying the 75 acres that it will request to be released for sale. A CEQA document addressing the environmental impacts of the sale of the lands identified by the County is expected to be released by the County this fall.

The Memorandum of Understanding (MOU)

The MOU provides guidance on the design and implementation of the LORP, as well as other environmental projects and studies in and near the LORP project areas, which are listed below:

- Yellow billed Cuckoo Habitat. Under the direction of LADWP and Inyo County, Ecosystem Sciences will evaluate yellow-billed cuckoo habitat in woodland areas of Hogback and Baker creeks. If deemed warranted, habitat enhancement plans will be prepared.
- Additional Mitigation. A total of 1,600 acre-feet of water per year will be provided by LADWP for: (1) implementation of an on-site mitigation measure at Hines Spring identified in the 1991 EIR; and (2) the implementation of on-site and/or off-site mitigation that is in addition to the mitigation measures identified in the 1991 EIR for impacts at Fish Springs, Big and Little Blackrock Springs, and Big and Little Seeley Springs.
- Owens Valley Land Management Plans. LADWP, in consultation with MOU parties, will identify areas of LADWP-owned lands, which are not part of the LORP where plans will be developed to remedy problems caused by grazing and other land uses.

Mitigation Measures from the 1991 EIR

The 1991 EIR on LADWP's groundwater pump included various mitigation measures designed to offset impacts of prior water management on native vegetation and aquatic resources. The EIR mitigation measures and their current status are shown in Table 12-1.

**TABLE 12-1
MITIGATION MEASURES LISTED IN THE 1991 EIR**

Mitigation	Reference	Status
1. 300 acres Five Bridges area	EIR p 10-58 FEIR p 3-16 DWP p 2 (4)	In progress. A mitigation plan for the area was approved in 1999. Mitigation was initiated in 1988. ICWD has recommended a revision of the mitigation plan since not all of the mitigation goals have not been achieved.
2. 140 acres near Laws	EIR p 10-66 FEIR p 3-18 DWP p 4 (9a)	In progress. The site has been fenced (95.9 acres) and baseline data were collected. A 10-acre test plot was implemented in Dec. 2001.
3. McNally Ponds and Native Pasture (348 acres) E/M	EIR p 10-67 DWP p 5	Partially completed. Ponds west of Hwy 6 have not received water annually during the waterfowl season. Pastures on the east side of the river are completed. The project has enhanced and mitigated 300 acres.
4. Laws/Poleta Native Pasture (216 acres) E/M	EIR p 10-67 FEIR p 3-18 DWP p 5 (9b)	Completed. Although these pastures receive water, both pastures have a poor cover of irrigated pasture. The project has mitigated 220 acres.
5. Laws Historical Museum Pastures (21 & 15 acres) E/M	EIR p 10-67 DWP p 5 (9b)	Not completed. These pastures do not currently receive irrigation water. The pasture located to the east of the museum has in the past been irrigated, whereas the pasture to the west of the museum has never been irrigated. Diversion structures have been installed in the east pasture, and irrigation was intermittent during the 1992 to 1998 period. An archaeological survey of the site was conducted in 2002. As part of the Laws Type E transfer of lands and re-irrigation, areas of this project are being considered for sprinkler irrigation.
6. Laws area (acres not provided)	EIR p 10-65 DWP p. 5 (9c)	Not Completed. County and LADWP are in disagreement over surface water and groundwater operations in the Laws area.
7. Buckley Ponds	EIR p 11-40 DWP p 6 (12)	Completed.
8. Farmer's Pond	EIR p 10-67 DWP p 5 (9b) EIR p 11-40 DWP p 6 (12)	Completed.
9. 640 acres near Laws	EIR p 10-67 FEIR p 3-18	Not Completed. Because of the existing sparse vegetation conditions, these lands may be considered by the Standing Committee for selective mitigation, which would be compatible with water spreading and groundwater recharge activities during wet years. There has not been any selective mitigation identified or implemented. The Standing Committee is to evaluate the need for mitigation.
10. 120 acres near Bishop	EIR p 10-64 DWP p 4 (7c)	In progress. The site has been fenced and baseline data were collected. Test plots have been established to evaluate different revegetation methodologies.
11. Klondike Lake E/M	EIR p 11-40 DWP p 6 (12)	Completed. The water supply, however, has been reduced. This reduction has eliminated the waterfowl nesting and feeding habitat area along the south shoreline.
12. Big Pine wellfield	EIR p 10-68 DWP p 5 (10b)	Ongoing. This area will be mitigated by the valley-wide mitigation under the Agreement, which is ongoing.

Mitigation	Reference	Status
13. Big Pine Ditch System	EIR p 10-68 DWP p 5 (10b)	In progress. Evaluation of groundwater source to supply ditch system is underway.
14. Steward Ranch	EIR p 9-74-9-77 DWP p 1 (1)	Completed. Mitigation agreement is in place.
15. Big Pine Northeast Regreening (30 acres) E/M	EIR p 10-57 FEIR p 3-16 DWP p 2 (3d) EIR p 10-68 DWP p 5 (10b)	Not Completed. Regreening has not been implemented.
16. 20 acres near Big Pine E/M	EIR p 10-68 FEIR p 3-18 DWP p 6 (10c)	Not Completed. Regreening has not been implemented.
17. 160 acres near Big Pine	EIR p 10-68 FEIR p 3-18 DWP p 5 (10a)	In Progress. The project implementation is in progress with 209 acres enclosed within a fence and test plots have been established to evaluate different revegetation techniques. In addition, baseline data have been collected. The project plan is to evaluate the test plots after five years and later expand the most promising revegetation methods to a larger scale. Mitigation is behind schedule.
18. Fish Springs	EIR p 10-59 to 62 FEIR p 2-72 DWP p 2 (6a)	Completed. Compensatory mitigation in place.
19. Big and Little Seeley Springs	EIR p 10-59 to 62 FEIR p 2-72 DWP p 2 (6b)	Completed. No evaluation of the extent of the natural revegetation in the vicinity of the pond has been made.
20. Fish Springs, Big and Little Seeley, and Big and Little Blackrock	EIR 10-62 DWP p 2 (6F)	Not Completed. The LORP portion of the mitigation is not yet implemented.
21. 80 acres (Taboose/Hines Spring area)	EIR p 10-58 FEIR p 3-16 DWP p 2 (3e)	In Progress. Impact area consists of 3 sites totaling ~ 115 acres. At the Charlie's Butte site, 100 Alkali Sacaton plants have been planted and receive drip irrigation. One site on Intake Rd. is fenced and was treated with a controlled burn.
22. Hines Spring	EIR p 10-59 to 62 FEIR p 2-73 DWP p 2 (6c)	Not Completed. Mitigation has not been implemented.
23. Little Blackrock Springs	EIR p 10-59-62 FEIR p 3-20 and p 2-72 DWP p 2 (6d)	Completed.
24. Big Blackrock Springs	EIR p 10-59-62 FEIR p 3-20 FEIR p 2-72 DWP p 2 (6a)	Partially completed. Compensatory mitigation in place; however, LORP not implemented.
25. Thibaut/Sawmill marsh habitat	EIR p 10-69 DWP p 6 (11) FEIR 3-18	In Progress. LORP not implemented. Implementation of Agreement is ongoing.

Mitigation	Reference	Status
26. 60 acres in S/S well field	EIR p 10-59 FEIR p 3-16 DWP p 2 (5)	In Progress. Some plans are behind schedule. Impact area consists of 3 sites totaling ~115.2 acres. Two of the project parcels (Independence 123 and Independence 131) are part of a trial revegetation program. Test plots have been established and numerous revegetation methods are being evaluated. In addition, both of these parcels have been fenced.
27. Independence East Side Regreening (30 acres)E/M	EIR p 10-57 FEIR p 3-16 DWP p 2 (3d) EIR p 12-10 DWP p 7 (13c)	Not Completed. Regreening has not been implemented.
28. Independence Woodlot (21 acres) E/M	EIR p 10-64 FEIR p 3-16 DWP p 1 (3a)	Completed.
29. Independence Pasturelands (460 acres) E/M	EIR p 10-63 FEIR p 3-17 DWP p 3 (7a) EIR p 12-10 DWP p 6 (13a)	Completed.
30. Independence Springfield (283 acres) E/M	EIR p 10-57 FEIR p 3-16 DWP p 1 (3a) EIR p 12-10 DWP p 6 (13a)	Completed.
31. Billy Lake	EIR p 11-40 DWP p 6 (12)	Completed. This project was completed as part of the Lower Owens River Rewatering Project.
32. Shepherd Creek Alfalfa Field (185 acres) E/M	EIR p 10-57 FEIR p 3-16 DWP p 1 (3b) EIR p 12-10 DWP p 7 (13b)	Completed. Alfalfa planted and maintained on 185 acres.
33. Expand Shepherd Creek Alfalfa E/M (60 acres)	EIR, p 10-58 DWP p 1 (3c)	Not Completed. The Standing Committee is to evaluate the need for expansion of irrigation to the east side of the highway, this has not been done.
34. Reinhackle Spring	EIR p 10- 59-63 FEIR p 3-21, 22 FEIR p 3-30, 31 FEIR p 2-11 (PD5) FEIR p 2-12 (PD-5) FEIR p 2-39 (WA-4) DWP p 3 (6e)	In Progress. Vegetation dependent on springflow should be monitored by the Technical Group, but has not been monitored to date. ICWD and LADWP are developing a monitoring program for potential impacts from pumping on springflow.
35. Lone Pine Ponds E/M	EIR p 11-40 DWP p 6 (12)	Completed.
36. Lone Pine East Side Regreening (11 acres) E/M	EIR p 10-64 FEIR p 3-17 DWP p 4 (7b)	Completed.
37. Lone Pine West Regreening (7 acres) E/M	EIR p 10-64 FEIR p 3-17 DWP p 4 7b	Completed.

Mitigation	Reference	Status
38. Lone Pine Woodlot (12 acres) E/M	EIR p 10-64 FEIR p 3-17 DWP p 3 (3a)	Completed.
39. Richards Field (189 acres) E/M	EIR p 10-64 FEIR p 3-17 DWP p 3 (7a)	Completed.
40. Van Norman Field (171 acres) E/M	EIR p 10-64 FEIR p 3-17 DWP p 3 (7a)	Completed. A portion of field is not capable of being irrigated. A re-evaluation of this portion of the project has been recommended.
41. Lower Owens River Project E/M	EIR p 10-62 DWP p 3, 4 MOU p 3, 4, 6 (11,12)	Not Completed. The LORP has not been implemented.
42. Salt Cedar Control Program	EIR p 10-53 DWP p 1 (2)	Completed/Ongoing. Program implemented in 1998.
43. Springs	EIR p 10-62 FEIR p 2-12 (PD-5) DWP p 3 (discussion)	Ongoing. Ecosystem Sciences has provided a draft inventory of springs and seeps to the signatories of the MOU.
44. Irrigated fields, including Cartago and Olancho	EIR p 10-63 DWP p 4 L-TA p B-21	Ongoing. Fields are being irrigated.
45. Meadow/ riparian vegetation dependent on agricultural tailwater	EIR p 10-64 DWP p 4 (8)	Not Completed. LORP not implemented.

References: EIR = Draft 1991 EIR; FEIR = Final 1991 EIR; DWP = Monitoring Program adopted at time of approval of FEIR by LADWP Board; MOU = 1997 Agreement between LADWP and Inyo County, Calif. State Lands Comm., CDFG, Sierra Club, O.V. Committee, and Carla Scheidlinger.

12.4 POTENTIAL CUMULATIVE IMPACTS

To evaluate the potential for significant cumulative impacts to occur between the LORP and the various past, present, and probable future projects described above, the key impacts of the LORP were compared to the major impacts associated with the cumulative projects. For certain projects, information about environmental impacts is available from the environmental document that was prepared to address the project. However, for most related projects, information on their environmental impacts is not available and must be assumed or generally deduced. Environmental impacts of the cumulative projects are briefly described below and summarized in Table 12-2.

It should be noted that the following analysis of cumulative impacts is focused solely on adverse impacts to the environment, not beneficial impacts. There are many beneficial cumulative impacts that are expected to occur from the implementation of the LORP and all other environmental enhancement projects described below. These include increases in the acreage and variety of wetland habitats, restoration of previously disturbed upland habitats, improvement in groundwater conditions along the river, new recreational/educational opportunities, and improvements in overall quality of life for Owens Valley residents.

**TABLE 12-2
SUMMARY OF CUMULATIVE IMPACTS**

Potentially Impacts of the LORP	Potential Cumulative Impacts with Other Projects or Programs?						
	Owens Lake Dust Mitigation Program	Owens Lake Groundwater Project	Owens Valley Recovery Plan (no specific projects identified yet)	HCP for LADWP Lands (HCP has not been developed yet)	Groundwater Management Plan under the Agreement	Other Projects under the Agreement	Mitigation Measures from the 1991 EIR
Class I Impacts							
Water quality and fish kill impacts due to initial re-watering of the river.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Class II Impacts							
Potential overbank flooding due to plugged road culverts during the initial releases to the project and from seasonal habitat flows.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Potential disturbance to nesting birds during the rare occasions when dense stands of cattails and bulrush must be mechanically removed along the river.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Temporary disturbance of upland habitats due to construction related disturbances (i.e., roads for initial channel clearing, and pump station construction).	Cumulative impact from both projects due to construction-related impacts to upland habitats. Less than significant due to adopted mitigation measures to restore habitats after construction.	Unknown impact, as a specific project has not been identified yet. Potential construction related impacts to uplands to install wells. Likely to be less than significant.	No specific actions identified in the plan. However, establishment of a Conservation Area at Blackrock could involve similar impacts. Likely to be less than significant.	No impact is anticipated	No impact is anticipated	Cumulative impact from certain projects due to construction-related impacts to upland habitats.	Cumulative impact due to construction-related impacts for certain projects. Less than significant due to adopted mitigation measures to restore habitats after construction.
Potential increase in non-native exotic species due to ground disturbance from construction of various berms and ditches in the Blackrock Waterfowl Area.	Cumulative impact from both projects due to possible colonization by exotics due to construction-related disturbances. Less than significant due to mitigation measures to prevent infestations.	Unknown impact, as a specific project has not been identified yet. Potential construction related disturbances. Likely to be less than significant.	No specific actions identified in the plan. However, establishment of a Conservation Area at Blackrock could involve similar impacts. Likely to be less than significant.	No impact is anticipated	No impact is anticipated	Cumulative impact from certain projects due to possible colonization by exotics due to construction-related disturbances.	Cumulative impact due to construction-related impacts for certain projects. Less than significant due to adopted mitigation measures to prevent infestations.
The LORP could cause an increase in noxious weeds such as pepperweed and Russian knapweed	Potential cumulative impact because both projects could facilitate colonization by saltcedar	No impact is anticipated	Potential cumulative impact if potential for weed infestation increased as a result of Recovery Plan projects	Potential cumulative impact if potential for weed infestation increased as a result of HCP	No impact is anticipated	Potential cumulative impact because some projects could facilitate colonization by saltcedar	No impact is anticipated
The rewatering of the river would create new wetted channel areas, including areas that are barren and could cause saltcedar infestation in these and other areas. The supplying of water to the Delta and to the Blackrock areas could create additional areas for the colonization of saltcedar.	Potential cumulative impact because both projects could facilitate colonization by saltcedar	No impact is anticipated	Potential cumulative impact if potential for saltcedar infestation increased as a result of Recovery Plan projects	Potential cumulative impact if potential for saltcedar infestation increased as a result of HCP	No impact is anticipated	Potential cumulative impact because some projects could facilitate colonization by saltcedar	No impact is anticipated

TABLE 12-2 (continued)

Potentially Impacts of the LORP	Potential Cumulative Impacts with Other Projects or Programs?						
	Owens Lake Dust Mitigation Program	Owens Lake Groundwater Project	Owens Valley Recovery Plan (no specific projects identified yet)	HCP for LADWP Lands (HCP has not been developed yet)	Groundwater Management Plan under the Agreement	Other Projects under the Agreement	Mitigation Measures from the 1991 EIR
Increase in mosquito populations due to additional flows.	Mitigation Measure PS-1 (Section 10.3.3) describes a program for monitoring, treating and, when possible, adjusting management to reduce mosquito sources within the LORP that threaten nearby communities. With implementation of mosquito control measures under both the Owens Lake Dust Mitigation Program and the LORP, the cumulative impact of the two projects on public health is anticipated to be less than significant.	No impact is anticipated	Possible cumulative impact if additional water is spread at Blackrock for Conservation Area purposes and the program for monitoring, treating, and reducing mosquito sources is not expanded.	No impact is anticipated	Not applicable	No impact is anticipated	Not applicable
Potential to disturb known archeological sites during construction of ditches in the Blackrock Waterfowl Area, and from temporary roads for initial channel desilting near the River Intake.	No impact is anticipated	Unknown impact, as a specific project has not been identified yet. Remote potential for impacts to archeological sites. Likely to be less than significant.	No specific actions identified in the plan. However, establishment of a Conservation Area at Blackrock could involve similar impacts. Likely to be less than significant.	No impact is anticipated	No impact is anticipated	No impact is anticipated	Cumulative impact due to construction-related impacts to upland habitats from certain projects. Less than significant due to adopted mitigation measures to restore habitats after construction.
There is a remote possibility that unknown archeological sites or cultural deposits could be affected by the new flows.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	
There is a potential to encounter previously unrecorded archeological deposits or sites during the earthmoving activities associated with pump station, power line, and Blackrock ditches and berms. Known sites also occur at Blackrock and along the power line.	No impact is anticipated	Unknown impact, as a specific project has not been identified yet. Remote potential for impacts to archeological sites. Likely to be less than significant.	No specific actions identified in the plan. However, establishment of a Conservation Area at Blackrock could involve similar impacts. Likely to be less than significant.	No impact is anticipated	Cumulative impact due to construction-related impacts to upland habitats from new wells. Less than significant due to adopted mitigation measures to restore habitats after construction.	No impact is anticipated	Cumulative impact due to construction-related impacts to upland habitats for certain projects. Less than significant due to adopted mitigation measures to restore habitats after construction.
<i>Class III Impacts</i>							
The rewatering of the river will convert 2,343 acres of alkali scrub/meadow (an upland vegetation) and 531 acres of alkali meadow (upland phase) to various wetland and riparian vegetation types due to inundation effects.	Potential cumulative impact because the dust control project is also causing habitat conversions	No impact is anticipated	Potential cumulative impact (adverse or beneficial) depending upon the nature of the habitat conversion and the species to be recovered	Potential cumulative impact (adverse or beneficial) depending upon the nature of the habitat conversion and the species to be protected	No impact is anticipated	Potential cumulative impact because some projects may also cause habitat conversions	No impact is anticipated

TABLE 12-2 (continued)

Potentially Impacts of the LORP	Potential Cumulative Impacts with Other Projects or Programs?						
	Owens Lake Dust Mitigation Program	Owens Lake Groundwater Project	Owens Valley Recovery Plan (no specific projects identified yet)	HCP for LADWP Lands (HCP has not been developed yet)	Groundwater Management Plan under the Agreement	Other Projects under the Agreement	Mitigation Measures from the 1991 EIR
Removal of channel sediments in the river immediately downstream of the River Intake prior to the release of water could cause temporary downstream water quality impacts.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	
Infrequent removal of tule and cattail stands could cause temporary downstream water quality impacts	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Construction of the pump station and maintenance dredging of the forebay could cause temporary downstream water quality impacts.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
There is a potential for cattails and tules to proliferate and reduce quality of wildlife habitat along the river	No impact is anticipated	No impact is anticipated	No impact is anticipated	Potential cumulative impact if increase adversely affects habitats to be used in Conservation Area	No impact is anticipated	No impact is anticipated	No impact is anticipated
Potential loss of stand of riparian forest at the pump station forebay due to flooding during operations.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Initial channel clearing will result in the loss of emergent wetlands along the river.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Potential reduction in aquatic habitats and wetlands due to a reduction in flows to the Delta, potentially affecting water-dependent aquatic organisms and birds such as the snowy plover and certain shorebirds.	Potential significant cumulative impact due to loss of wetland habitats and snowy plover habitat under the dust control project.	Unknown impact as a specific project has not been identified. However, the Agreement would prohibit any adverse effects on vegetation from pumping.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
Construction of the pump station will result in temporary and permanent losses of upland and wetland habitats	Cumulative impact from both projects due to construction-related impacts to upland and wetland habitats. Less than significant due to adopted mitigation measures to restore habitats after construction.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	Cumulative impact from certain projects due to construction-related impacts to upland and wetland habitats.	No impact is anticipated
Construction activities in Blackrock would result in temporary and permanent losses of upland and wetland habitats	Cumulative impact from both projects due to construction-related impacts to upland and wetland habitats. Less than significant due to adopted mitigation measures to restore habitats after construction.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	Cumulative impact from certain projects due to construction-related impacts to upland and wetland habitats.	No impact is anticipated

TABLE 12-2 (continued)

Potentially Impacts of the LORP	Potential Cumulative Impacts with Other Projects or Programs?						
	Owens Lake Dust Mitigation Program	Owens Lake Groundwater Project	Owens Valley Recovery Plan (no specific projects identified yet)	HCP for LADWP Lands (HCP has not been developed yet)	Groundwater Management Plan under the Agreement	Other Projects under the Agreement	Mitigation Measures from the 1991 EIR
Construction activities for all LORP elements would cause temporary air quality impacts	Little potential for cumulative impacts, as the project construction periods do not overlap	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
The initial rewatering will cause off-gassing from organic sediments that cause unpleasant odors	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
New land management on LADWP leases could cause cattle drift on BLM lands	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated
The LORP may cause increased recreation, which could adversely affect cultural and natural resources.	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated	No impact is anticipated

Owens Lake Dust Mitigation Program (Including the North Sand Sheets Project)

Environmental impacts of this project are listed below from the Final EIR for the project prepared by GBUAPCD in 1997 (programmatic analysis) and in a Negative Declaration in 2001 for the North Sand Sheets Project (first phase of the project). The project involves a wide variety of impacts, many of which are considered potentially significant. There is a potential for a significant cumulative impact with the LORP regarding loss or degradation of aquatic and wetland impacts (and dependent bird species) due to both projects, which would affect similar resources in and near the Delta Habitat Area. This is the only potentially significant cumulative impact identified for the proposed LORP.

- Potential infiltration of irrigation water to the brine pool, which could raise the brine pool and affect trona mining operations
- Operations may cause deposition of toxic metals due to precipitation of salts along the lower edge of the spreading areas
- Long-term leaching of metals from the imported gravels spread as part of the project could alter the composition of the trona and decrease its value
- Application of water to the playa would raise the shallow groundwater level under the playa, and potentially increase the discharge from springs and seeps along the historic shoreline
- The flooding of the North Sand Sheet area on either side of the Delta would increase the shallow groundwater levels and improve groundwater quality, but the effect to the shallow groundwater under the Delta of this measure is unknown
- Placement of a gravel blanket over large areas of the playa on the southern end of the lake would increase shallow groundwater levels over time due to reduced evaporation
- Irrigation of shallow flooded areas would increase the level of the shallow groundwater and improve water quality. This effect would be localized.
- Construction activities would temporarily adversely affect air quality (Significant)
- Operations of shallow flooded areas would cause a localized increase in relative humidity
- About 121 acres of transmontane alkali meadow would be converted to shallow flooded areas or dry playa due to construction and operation of the project (Significant).
- The creation of shallow flooded areas could cause an increase in exotic species at Owens Lake (Significant)
- Habitat potentially occupied by several plant species of special concern would be removed by the project (Significant)
- Construction could adversely affect nesting northern harriers, loggerhead shrike, and Le Conte's thrasher (Significant)
- Construction and operations could adversely affect the Owens Valley vole, Mohave ground squirrel, and American badger.
- Construction, operations, and maintenance of the project could significantly reduce habitat for the snowy plover (Significant)
- Construction activities could adversely affect prehistoric archeological sites (Significant)
- Aggregate mining associated with the construction of the project could temporarily adversely affect sensitive land uses due to noise from equipment
- There would be an increase in local traffic on public and private roads due to construction and operations of the project.
- The water demand for the project would increase the frequency of water supply shortages to Los Angeles

- The diversion of water to the project would reduce energy production from LADWP's hydroelectric facilities in the Owens Valley
- Portions of the shallow flooded areas would create mosquito breeding habitat

Owens Lake Groundwater Project

No specific project has been identified to date. Therefore, potential adverse impacts are speculative. Any future Owens Lake groundwater project would be subject to CEQA.

Owens Valley Wetland and Aquatic Species Recovery Plan

No specific project has been identified to date based on the plan. However, implementation of the LORP is not anticipated to affect the development or implementation of a future Owens Valley Wetland and Aquatic Species Recovery Plan.

HCP for LADWP Lands

No specific project has been identified. However, implementation of the LORP is not anticipated to affect the development or implementation of a future HCP.

Other Projects Under the Agreement

The projects being developed pursuant to the Agreement are designed to enhance environmental conditions and quality of life in the Owens Valley. Potential adverse impacts associated with these projects vary considerably, but are generally minor, incidental impacts associated with construction activities (e.g., temporary and permanent disturbances to upland habitats).

Mitigation Measures from the 1991 EIR

The projects being developed as mitigation measures from the 1991 EIR are also designed to offset prior impacts to native habitats from groundwater pumping. Potential adverse impacts from these environmental enhancement projects (most of which include new or enhanced wetland or riparian habitats, or improved management of irrigated pastures) would likely be localized construction related impacts to upland habitats and archeological sites due to infrastructure improvements. No adverse cumulative effects from operations of these projects are expected as they are designed to improve environmental conditions or offset prior impacts.

12.5 CUMULATIVE IMPACTS TO THE WATER SUPPLY OF THE CITY OF LOS ANGELES

In LADWP's 2000 Urban Water Management Plan (Plan), it was estimated that the Owens Lake Dust Control Project would use approximately 42,000 acre-feet of water, annually, which would otherwise be exported to Los Angeles. The Final EIR for the dust mitigation project indicated that this water demand for the project would increase the frequency of water supply shortages to the City, but concluded that because LADWP had readily available sources for replacement water that the impact would be less than significant. Recent estimates of the water requirement for dust mitigation have escalated to 64,700 acre-feet per year. Therefore, it appears that the water requirement for the dust control project will exceed the projection used in the Plan by 22,700 acre-feet per year.

In addition to water supply impacts of the dust control project, the Plan reported that through 2020, exports to Los Angeles from the Mono Basin will be reduced by approximately 79,000 acre-feet per year when compared to exports prior to a restriction on exports from the Mono Basin. There has been no change in this projection.

In addition to the above-described projects, the Agreement between Inyo and LADWP has resulted in a decrease in projected groundwater pumping in the Owens Valley. The 1991 EIR for purposes of analysis assumed that groundwater pumping under the Agreement would average 110,000 acre-feet per year. During the period between 1970 (when pumping was increased to supply the increased capacity of the Aqueduct) and 1990 (when the groundwater management provisions of the Agreement went into effect), actual groundwater pumping by LADWP averaged 104,022 acre-feet per year. In contrast, after the groundwater management provisions of the Agreement, and the Drought Recovery Policy, went into effect, groundwater pumping from 1991 to 2002 averaged 74,119 acre feet per year. Therefore, groundwater pumping by LADWP between 1990 and 2002 was 35,881 acre-feet less than the amount used for analysis in the 1991 EIR and 29,903 acre-feet less than LADWP's average annual pumping from 1970 and 1990. However, it is speculative to estimate the amount of groundwater pumping from the Owens Valley that will take place in the future. Finally, it is important to note, that in projecting that exports via the Los Angeles Aqueduct from the Eastern Sierra will be approximately 321,000 acre-feet per year through 2020, the Plan does not specify an amount of groundwater that will be annually pumped from the Owens Valley that will contribute to this export total.

The average annual water consumption associated with the LORP, during steady state conditions, is estimated to be about 34,579 acre-feet per year (see Section 10.5). This water requirement represents a net increase of about 16,294 acre-feet per year over existing water uses in the valley that currently maintain elements of the LORP, including off-river lakes and ponds; wetlands and pasture in the Blackrock Waterfowl Area; and wetlands along the lower reach of the river. This amount of water is approximately the same as the LORP water consumption projected by LADWP (i.e., 16,000 acre-feet per year) in its water supply projections for 2020 in the Plan. Hence, the proposed project would not cause a reduction in the amount of water planned to be available for export from the Owens Valley for municipal uses in the Los Angeles Basin, and therefore, would not have an impact on water supply for municipal users when viewed as a single project impact.

However, the unplanned reduction in water exports from the Mono Basin and Owens Valley noted above creates a potential for a cumulative water supply impact with the LORP water demand, even though the water demands of the LORP are not expected to exceed the projections made in the Plan. The unplanned reductions include the following: (1) a reduction in exports from the Mono Basin of 79,000 acre-feet per year; and (2) a reduction in groundwater pumping from the Owens Valley of 29,903 acre-feet per year less than LADWP's average annual pumping from 1970 and 1990; and (3) increased demand of 22,700 acre feet per year for the dust control project. As a result of these projects, the total cumulative reduction from the amount exported via the Los Angeles Aqueduct could be as high as a total of 131,603 acre-feet per year. In order for LADWP to replace the water that is not exported from the Owens Valley and the Mono Basin, it will have to purchase water from Metropolitan Water District (MWD) for the foreseeable future at a cost of \$350 per acre-foot or \$46.1 million dollars annually. This will create additional demand and impacts on MWD supplies that are already being impacted by other significant water related issues.

12.6 CUMULATIVE IMPACTS RELATED TO THE WILLOW FLYCATCHER RECOVERY PLAN

As described in Section 2.7, the southwestern willow flycatcher (*Empidonax traillii* ssp. *extimus*) is a federally endangered species that occurs along the Lower Owens River. A draft recovery plan for the

endangered southwestern willow flycatcher was issued by US Fish and Wildlife Service (USFWS) for public review in April 2001 (Recovery Plan). The potential cumulative impacts of the proposed Recovery Plan for this species and the LORP actions are evaluated below. It should be noted that the willow flycatcher Recovery Plan does not describe any specific “reasonably foreseeable or probable projects,” which are the types of projects typically addressed in a CEQA and NEPA cumulative impact assessment. Hence, potential cumulative impacts between the LORP and future Recovery Plan actions are addressed at a programmatic level by necessity.

The Endangered Species Act of 1973 (ESA) calls for preparation of recovery plans for threatened and endangered species which establish recovery goals, describe site-specific management actions recommended to achieve those goals, and estimate the time and cost required for recovery. A recovery plan is not self-implementing, but presents a set of recommendations for managers and the general public.

The Recovery Plan has two objectives: (1) recovery to the point that reclassification to “threatened” is warranted; and (2) recovery to the point that delisting is warranted. Under the proposed Recovery Plan, reclassification from endangered to threatened may be considered when the following criterion has been met for a period of five consecutive years - the total known population of flycatchers achieves a minimum of 1,950 territories (equating to approximately 3,900 individuals). The southwestern willow flycatcher may be removed from the list of threatened and endangered species when the following criteria have been met: Criterion 1. The habitats and flycatcher populations recovered to achieve downlisting to threatened are protected into the foreseeable future through development and implementation of conservation management agreements. Criterion 2. The amount of suitable breeding habitat protected within each management unit (defined below) is double that required to support the target number of flycatchers under criterion for reclassification.

USFWS has divided the flycatcher’s range into six Recovery Units, which are further subdivided into Management Units. The LORP is located in the Basin and Mojave Recovery Unit, which has five Management Units: Owens River, Kern River, Amargosa River, Mojave River, and Salton Sea. There are 58 known flycatcher territories in this unit (six percent of the range-wide total). Almost all population sites have fewer than five territories. Specific populations in the Owens Valley are as follows: OWBIGP Owen's River - Big Pine; OWCHBL Owen's River - Chalk Bluff to 5 Bridges; OWHWY6 Owen's River - Hwy 6; OWLPCR Owen's River - Lone Pine Creek; and OWPOLE Owen's River - Poleta Road. USFWS estimates there are 16 territories in this unit.

Under the draft Recovery Plan, the minimum number of southwestern willow flycatcher territories needed to achieve reclassification to threatened in the Owens River Management Unit is 50. The Plan indicates that the focus of recovery efforts in the Owens River Management Unit should be on the following reaches of the Owens River: (1) Below Pleasant Valley Reservoir to Tinemaha Reservoir; and (2) below Tinemaha Reservoir to Owens Lake. The latter encompasses the Lower Owens River affected by the LORP.

The proposed actions needed to recover the southwestern willow flycatcher are presented below:

1. Increase and improve occupied, suitable, and potential breeding habitat
2. Increase metapopulation stability by increasing size, number, and distribution of populations and habitat within Recovery Units
3. Improve demographic parameters by increasing reproductive success
4. Minimize threats to wintering and migration habitat
5. Survey and monitor
6. Conduct research
7. Provide public education and outreach

8. Assure implementation of laws, policies, and agreements that benefit the flycatcher
9. Track recovery progress

The implementation of the above actions will be based on available funding. No specific projects to be implemented in the near future are identified in the Recovery Plan for the Basin and Mojave Recovery Unit, nor for the Owens River Management Unit. However, the Recovery Plan identifies several types of actions that could be facilitated by the riparian habitat restoration caused by the LORP along the Lower Owens River, or that would be complementary to the LORP. These actions are listed below using the specific wording from the Recovery Plan. The potential relationship with the LORP is noted for each action.

- **“1.2. Work with private landowners, state agencies, nongovernmental organizations, and municipalities to conserve and enhance habitat on non-federal lands. 1.2.2. Achieve protection of occupied habitats.** Achieve protection of occupied habitats through Habitat Conservation Plans, Safe Harbor Agreements, partnerships, cooperative agreements, conservation easements, or acquisition of sites from willing landowners.” *Relationship to the LORP: As the willow flycatcher population increases over time in the LORP project area, LADWP may consider these types of cooperative efforts with USFWS to protect the populations.*
- **“1.2.3. Provide technical assistance to conserve and enhance occupied habitats on non-Federal lands.** Make technical assistance and, where possible funding, available to non-federal owners of occupied habitats, to conserve and enhance habitat.” *Relationship to the LORP: USFWS may wish to provide technical assistance to LADWP as the LORP is implemented to enhance the benefits of the LORP for willow flycatchers.*
- **“1.2.4. Pursue joint ventures toward flycatcher conservation.** Pursue joint ventures toward flycatcher conservation.” *Relationship to the LORP: LADWP and USFWS may consider such joint ventures in the future to further benefit the willow flycatcher in the LORP project area.*
- **“2.1. Increase size, number, and distribution of populations and habitat within Recovery Units. 2.1.1. Conserve and protect all existing breeding sites.** Conservation of all existing breeding sites and occupied habitats is crucial to recovery.” *Relationship to the LORP: The enhancement of riparian habitats and modified grazing practices along the river will facilitate this action.*
- **“2.1.3. Develop new habitat near extant populations.** Increase the extent, distribution, and quality of habitat close to extant populations. This will increase the stability of local metapopulations by providing new habitat that will serve dual functions: (1) replacement habitat in the event of destruction of some habitat in the current population, and (2) new habitat for colonization, which once occupied will enhance connectivity between sites.” *Relationship to the LORP: The LORP will increase the amount and geographic extent of suitable habitat for the willow flycatcher in the Owens Valley, and therefore, facilitate this action.*
- **“2.1.4. Enhance connectivity to currently isolated occupied sites.** Using the habitat restoration techniques described above, increase habitat near to and between currently isolated sites. This will create “stepping stones” of habitat to enhance connectivity as well as provide replacement habitat and colonization habitat.” *Relationship to the LORP: The LORP will increase the amount and geographic extent of suitable habitat for the willow flycatcher along the Lower Owens River corridor, providing greater connectivity. Hence, it would facilitate this action.*

- **“3.1.1.1. Increase the amount and quality of riparian habitat.** Enhancing habitat is likely to reduce the impact of cowbird parasitism, in several ways. Increased amounts of high quality habitat and increased patch sizes of such habitat will allow for larger flycatcher breeding populations. These larger populations are likely to experience reduced levels of cowbird parasitism by dispersing cowbird eggs over a larger number of nests. Also, due to their relatively larger amounts of interior habitat, large patches of riparian woodland are likely to further reduce cowbird parasitism and nest predation, both of which tend to be concentrated along habitat edges.” *Relationship to the LORP: The LORP will increase the amount and geographic extent of suitable habitat for the willow flycatcher in the Owens Valley, and therefore, facilitate this action.*

As described in Section 4.7, the restoration of riparian habitats, specifically riparian willow forest along the Owens River, could provide new habitat and improve existing habitat suitable for this species. An increase in suitable habitat would provide more opportunity for foraging and nesting by this seasonal breeder and migrant, which in turn, could increase reproduction and survival. No known suitable habitat for this species would be affected by LORP-related construction activities. Hence, no adverse cumulative impact between the LORP and any future actions or projects identified in the willow flycatcher Recovery Plan is anticipated.