

# **Lower Owens River Project Work Plan, Budget, and Schedule 2021-2022 Fiscal Year**

Prepared by  
Inyo County Water Department and  
Los Angeles Department of Water and Power

# Lower Owens River Project Work Plan, Budget, and Schedule

## 2021-2022 Fiscal Year

The Inyo County Water Department and the Los Angeles Department of Water and Power jointly prepared this 2021-2022 Fiscal Year Lower Owens River Project Work plan. The Inyo County/Los Angeles Technical Group adopted this work plan on June 28, 2021. The Technical Group recommends that the Inyo County Board of Supervisors and the City of Los Angeles Board of Water and Power Commissioners or their designee approve the 2020-2021 Fiscal Year Lower Owens River Project Work Plan.

### Introduction

The Final Environmental Impact Report for the Lower Owens River Project (LORP) Section 2.2.1 provides that the Long-Term Water Agreement (LTWA) Technical Group will develop and adopt an annual work program for the LORP, which describes LORP work to be performed in the following fiscal year. This work program identifies who will perform or oversee tasks, a schedule, and a budget. This work plan and budget was prepared according to the Agreement between the County of Inyo and City of Los Angeles Department of Water and Power Concerning Funding of the Lower Owens River Project (Funding Agreement) sections D, E, and F. Following adoption by the Technical Group, the work program will be submitted to the County and LADWP governing board for approval. Each governing board must approve the plan before this work plan and budget can be implemented. This Work Plan, Budget, and Schedule is in force from July 1, 2021 – June 30, 2022.

The objectives of this work plan are to maintain compliance with the July 11, 2007 Superior Court Stipulation and Order in Case No. S1CVCV01-29768, conduct monitoring necessary to achieve the LORP goals described in the 1997 Memorandum of Understanding, maintain infrastructure necessary to the operation of the LORP, and implement adaptive management measures. The following priorities are observed in this work plan:

1. Work and activities required to maintain required flows in the river and required water supplies to other LORP components.
2. Maintenance associated with flow compliance monitoring and reporting associated with the above referenced Stipulation and Order.
3. Habitat and water quality monitoring described in the LORP Monitoring and Adaptive Management Plan, or required to comply with the requirements of the Lahontan Regional Water Quality Control Board.
4. The preparation of the LORP Annual Report as required by Section 2.10.4 of the LORP Final EIR and by Section L of the above referenced Stipulation and Order.
5. Other work or activities including the implementation of adaptive management measures.

Section 1 of this work plan covers the budget and schedule for operations and maintenance, monitoring, mosquito abatement, noxious species control, saltcedar control, and reporting activities.

Section 2 outlines Adaptive Management activities identified to be conducted in the 2021-2022 fiscal year.

The budget amount reflects the additional costs above equal sharing of work by the parties and does not include the costs of Inyo and LA staff times where they offset.

## LORP Operations & Maintenance and Monitoring Budget

Table 1 summarizes the costs of operation, maintenance and monitoring for the fiscal year and specifies the costs incurred by Inyo County and Los Angeles for standard operations, maintenance, and monitoring, as well as for Adaptive Management. A summary of these activities follows in Sections 1 and 2 below.

In 2021-2022 a total of 16 people days will be required to complete standard biologic and water quality monitoring tasks. Inyo County and LADWP will each contribute 8 days. Maintenance, Operations, and Hydrologic monitoring are tasks solely performed by LADWP, and are without offsetting costs. LADWP has allocated 120 days for Range Monitoring, which is a LADWP cost. Inyo County and LADWP will perform additional Adaptive Management tasks over 270 people days (Inyo County and LADWP each 135 days). There is no budget for the MOU Consultant in 2021-2022.

Based on this budget, total cost for the fiscal year is \$591,865.43, with Inyo County contributing \$117,896.15 and LADWP contributing \$473,969.28. Inyo County's Post Implementation Credit will be decreased by \$178,036.56. The credit deduction is calculated by subtracting the dollars LADWP will spend during the fiscal year from the amount spent by Inyo County, and dividing this figure by two.

Table 1. LORP Work Plan Summary Budget, FY 2021-2022

Inyo County	Budgeted Staff Work Days	Value of Additional Staff Time, Materials, and Equipment	Payment/Credit
Biologic and Water Quality	8	\$0.00	
Mosquito Abatement	-	\$30,000.00	
Noxious Species Control	-	\$50,000.00	
Adaptive Management	135	\$37,896.15	
<b>Inyo County Totals</b>	<b>143</b>	<b>\$117,896.15</b>	<b>(\$178,036.56)</b>
LADWP	Budgeted Staff Work Days	Budgeted Value of Additional Staff Time, Materials, and Equipment	
Hydrologic Monitoring	-	\$73,290.00	
Biologic and Water Quality	8	\$0.00	
Operations and Maintenance	-	\$314,783.13	
Mosquito Abatement	-	\$30,000.00	
Rodent Control	-	\$18,000.00	
Adaptive Management	135	\$37,896.15	
<b>LADWP Totals</b>	<b>143</b>	<b>\$473,969.28</b>	
<b>Combined Total</b>	<b>286</b>	<b>\$591,865.43</b>	
Inyo County Credit Adjustment (1/2 of the Difference in Expenditures between Inyo County and LADWP)		<b>(\$178,036.56)</b>	

**Footnote to Table 1. Post Implementation Credit and Trust Accounting**

Original Post Implementation Credit		\$2,253,033	\$2,253,033
Increase Post Imp Credit by 2.9% based on the July 2007 price Index	2.9%	\$65,338	\$2,318,371
County's obligation for July 11, 2007 to June 30, 2008 period		\$243,524	\$2,074,847
Increase the remaining balance of the Post Implementation Credit by 5.7% based upon the July 2008 price index	5.7%	\$118,266	\$2,193,113
County's obligation for 2008-2009 fiscal year		\$243,524	\$1,949,589
Reduce the remaining balance of the Post Implementation Credit by 1.3% based upon the April 2009 price index	-1.3%	\$25,345	\$1,924,245
County's share of the costs for the 2009-2010 work plan and budget, including adaptive management.		\$266,176	\$1,658,069
Increase the remaining balance of the Post Implementation Credit by 1.9% based upon the April 2010 price index effective July 10, 2010	1.9%	\$31,503	\$1,689,572
County's share of the costs for the 2010-2011 work plan and budget, including adaptive management effective July 21, 2010.		\$317,805	\$1,371,767
Increase the remaining balance of the Post Implementation Credit by 3.3% based upon the April 2011 price index effective July 10, 2011.	3.3%	\$45,268	\$1,417,035
County's share of the costs for the 2011-2012 work plan and budget, including adaptive management effective July 21, 2011.		\$48,278	\$1,368,757
County's share of the costs for the Amended 2011-2012 work plan and budget, effective July 21, 2011.		\$57,687	\$1,311,070
Increase the remaining balance of the Post Implementation Credit by 1.5% based upon the April 2012 price index effective July 10, 2012.	1.5%	\$19,666	\$1,330,736
County's share of the costs for the 2012-2013 work plan and budget, including adaptive management effective July 23, 2012.		\$14,084	\$1,344,820
Increase the remaining balance of the Post Implementation Credit by 0.9% based upon the April 2013 price index effective July 10, 2013.	0.9%	\$12,103	\$1,356,924
County's share of the costs for the 2013-2014 work plan and budget, including adaptive management effective June 21, 2013.		\$41,979	\$1,398,903
Increase the remaining balance of the Post Implementation Credit by 1.4% based upon the April 2014 price index effective July 10, 2014.	1.4%	\$19,585	\$1,418,487
County's share of the costs for the 2014-2015 work plan and budget, including adaptive management effective June 21, 2014.		\$78,483	\$1,340,004
Increase the remaining balance of the Post Implementation Credit by 0.5% based upon the April 2015 consumer price index.	0.5%	\$6,700	\$1,346,704
County's share of the costs for the 2015-2016 work plan and budget, including adaptive management effective June 21, 2015.		\$73,755	\$1,272,949
Increase the remaining balance of the Post Implementation Credit by 2.0% based upon the April 2016 consumer price index.	2.0%	\$25,459	\$1,298,408
County's share of the costs for the 2016-2017 work plan and budget, including adaptive management effective June 21, 2016.		\$84,704	\$1,213,704
Increase the remaining balance of the Post Implementation Credit by 2.7% based upon the April 2017 consumer price index.	2.7%	\$32,770	\$1,246,474
County's share of the costs for the 2017-2018 work plan and budget, including adaptive management, effective October 31, 2018.		\$114,857	\$1,131,617
Increase the remaining balance of the Post Implementation Credit by 4.0% based upon the April 2018 consumer price index.	4.0%	\$45,265	\$1,176,882
County's share of the costs for the 2018-2019 work plan and budget, including adaptive management, effective October 31, 2019.		\$139,493	\$1,037,389
Increase the remaining balance of the Post Implementation Credit by 3.3% based upon the April 2019 consumer price index.	3.3%	\$34,234	\$1,003,155
County's share of the costs for the 2019-2020 work plan and budget, including adaptive management, effective October 31, 2020.		\$132,558	\$870,598
Increase the remaining balance of the Post Implementation Credit by 0.7% based upon the April 2020 consumer price index.	0.7%	\$6,094	<b>\$876,692</b>

The annual CPI adjustment will take place prior to deduction of a credit for County's annual share of the LORP post-implementation costs (PIA 8.4). The LORP Trust Account Balance as of April 30, 2021 was \$2,234,856.55.

## Section 1. Maintenance and Monitoring Tasks

### LORP Tasks

The maintenance and monitoring portion of this work plan consists of four categories of tasks: operations and maintenance, hydrologic monitoring, biological monitoring, and range monitoring.

### Operations and Maintenance

Maintenance activities consist of cleaning sediment accumulations and other obstructions from water measurement facilities, cleaning sediment and aquatic vegetation from ditches, mowing ditch margins, adjustments to flow control structures, maintenance/replacement of existing structures, and necessary annual maintenance to spillgates, ditches, dikes, berms, ponds and other features in the BWMA.

Operation activities consist of setting and checking flows and ensuring that necessary flows reach the river to maintain mandated base and seasonal habitat flows. Estimates of the level of effort necessary for maintenance are adjusted as required by section II.D of the Funding Agreement, which allows that costs for maintenance of ditches, spillgates, and control structures that are above the baseline costs for facilities in the river corridor and Blackrock Waterfowl Management Area (BWMA) shall be shared.

Budgeted Operations and Maintenance costs and associated material costs for 2021-2022 are included in Table 2. The estimated costs for River corridor and BWMA facilities are \$216,759.40 and \$258,028.73 respectively, for an overall 2021-2022 operations and maintenance expenditure of \$474,788.13. This figure reduced by the combined CPI-adjusted baseline costs for the river corridor and BWMA facilities is \$314,783.13 (Table 2).

Purchase and replacement of the LORP Intake Langemann Gate were budgeted and planned for the 2020-2021 fiscal year and were described in the LORP 2020-2021 Fiscal Year Work Plan and Budget. However, this work did not occur due to purchasing constraints and staff shortages during the COVID-19 pandemic. Costs for the Langemann Gate and its installation were already accounted for in the 2020-2021 fiscal year so are not provided in Table 2 below. This work will be conducted in the 2021-2022 fiscal year.

### Hydrologic Monitoring

Hydrologic monitoring consists of monitoring, analyzing, and reporting river baseflows and seasonal habitat flows, the flooded extent of the Blackrock Waterfowl Management Area (BWMA), the levels of the Off-River Lakes and Ponds, and baseflows, pulse flows, and seasonal habitat flows to the Delta. Hydrologic monitoring costs for the 2021-2022 fiscal year are \$73,290.00 (Table 3).

### Biological/Water Quality Monitoring

Biological monitoring, analysis, reporting, and report preparation will be jointly conducted by Inyo and LADWP as identified in Table 4.01 of the LORP Monitoring and Adaptive Management Plan (MAMP) (Table 4). LADWP and Inyo County will continue to monitor flooded extent in 2021-2022, however, as described in the BWMA Interim Management and Monitoring Plan. Inyo Staff and LADWP Staff will spend a total of 16 people days on this monitoring. There will be no off-setting costs.

### Adaptive management

Inyo County and LADWP have identified adaptive management tasks to complete in the 2021-2022 fiscal year. Refer to Section 2 for more information. A total of 270 people-days is budgeted for adaptive management, with Inyo County contributing 135 people-days and Los Angeles contributing 135 days.

Table 2. LORP Operations and Maintenance Budget- 2021-2022 Fiscal Year

Labor					Equipment			
Location/Activity	Labor type	Hours	Labor Rate	Total Labor	Equipment/Materials	Hours	Rate	Total Equip
River								
Measuring Station Maintenance								
	Power Shovel Operator	30	\$52.06	\$1,561.80	Excavator	30	\$108.80	\$3,264.00
	Truck Driver	30	\$45.30	\$1,359.00	3 axle dump truck	30	\$56.50	\$1,695.00
	Operator	10	\$49.37	\$493.70	Mower	10	\$90.10	\$901.00
	Building Repairman	10	\$45.88	\$458.80	3/4 ton 4x4 pick- up	100	\$13.60	\$1,360.00
	MCH	50	\$40.16	\$2,008.00				
<b>Subtotal</b>				<b>\$5,881.30</b>				<b>\$7,220.00</b>
Intake Spillgate								
Maintenance	Building Repairman	40	\$45.88	\$1,835.20	Bull Dozer	80	\$61.65	\$4,932.00
	MCH	340	\$40.16	\$13,654.40	3/4 ton 4x4 pick- up	620	\$13.60	\$8,432.00
	Operator	200	\$49.37	\$9,874.00	Mower	20	\$90.10	\$1,802.00
	Power Shovel Operator	40	\$52.06	\$2,082.40	Excavator	40	\$108.80	\$4,352.00
	Truck Driver	40	\$45.30	\$1,812.00	Versadrede	100	\$200.00	\$20,000.00
					3 axle dump truck	40	\$48.03	\$1,921.20
<b>Subtotal</b>				<b>\$29,258.00</b>				<b>\$41,439.20</b>
Thibaut Spillgate and Ditch								
Cleaning	Power Shovel Operator	40	\$52.06	\$2,082.40	Excavator	40	\$108.80	\$4,352.00
	Operator	80	\$49.37	\$3,949.60	Backhoe and trailer	40	\$37.19	\$1,487.60
	Truck Driver	20	\$45.30	\$906.00	Loader	40	\$37.40	\$1,496.00
	MCH	120	\$40.16	\$4,819.20	3 axel dump truck	40	\$48.03	\$1,921.20
					3/4 ton 4x4 pick- up	160	\$13.60	\$2,176.00
<b>Subtotal</b>				<b>\$11,757.20</b>				<b>\$11,432.80</b>
Independence Spillgate and Ditch								
Cleaning/Mowing	Power Shovel Operator	40	\$52.06	\$2,082.40	Excavator	40	\$108.80	\$4,352.00
	Operator	80	\$49.37	\$3,949.60	Loader	40	\$37.40	\$1,496.00
	Truck Driver	30	\$45.30	\$1,359.00	Side dump	10	\$65.66	\$656.60
	MCH	160	\$40.16	\$6,425.60	Mower	40	\$90.10	\$3,604.00
					3/4 ton 4x4 pick- up	280	\$13.60	\$3,808.00
					Water truck	40	\$31.23	\$1,249.20
<b>Subtotal</b>				<b>\$13,816.60</b>				<b>\$15,165.80</b>
Locust Spillgate and Ditch								
Cleaning	Power Shovel Operator	20	\$52.06	\$1,041.20	Excavator	20	\$108.80	\$2,176.00
	Operator	80	\$49.37	\$3,949.60	Backhoe and trailer	80	\$37.19	\$2,975.20
	MCH	100	\$40.16	\$4,016.00	3/4 ton 4x4 pick- up	200	\$13.60	\$2,720.00
	Truck Driver	40	\$45.30	\$1,812.00	3 axle dump truck	40	\$48.03	\$1,921.20
<b>Subtotal</b>				<b>\$10,818.80</b>				<b>\$9,792.40</b>
Georges Ditch								
Cleaning/Mowing	Operator	80	\$49.37	\$3,949.60	Mower	30	\$90.10	\$2,703.00
	Truck Driver	20	\$45.30	\$906.00	Backhoe and trailer	30	\$37.19	\$1,115.70
	Power Shovel Operator	40	\$52.06	\$2,082.40	Loader	20	\$37.40	\$748.00
	MCH	120	\$40.16	\$4,819.20	Excavator	40	\$108.80	\$4,352.00
					3/4 ton 4x4 pick-up	240	\$13.60	\$3,264.00
<b>Subtotal</b>				<b>\$11,757.20</b>				<b>\$12,182.70</b>
Alabama Spillgate								
Cleaning	Power Shovel Operator	60	\$52.06	\$3,123.60	Excavator	60	\$108.80	\$6,528.00
	Operator	40	\$49.37	\$1,974.80	Bull Dozer	40	\$61.65	\$2,466.00
	Truck Driver	180	\$45.30	\$8,154.00	3 axle dump truck	180	\$48.03	\$8,645.40
					3/4 ton 4x4 pick-up	100	\$13.60	\$1,360.00
<b>Subtotal</b>				<b>\$13,252.40</b>				<b>\$18,999.40</b>

Labor					Equipment			
Location/Activity	Labor type	Hours	Labor Rate	Total Labor	Equipment/Materials	Hours	Rate	Total Equip
<b>Delta Spillgate</b>								
	Building Repairman	40	\$45.88	\$1,835.20	3/4 ton 4x4 pick- up	40	\$13.60	\$544.00
	MCH	40	\$40.16	\$1,606.40				
<b>Subtotal</b>				<b>\$3,441.60</b>				<b>\$544.00</b>
<b>River Subtotal</b>				<b>\$99,983.10</b>				<b>\$116,776.30</b>
<b>Blackrock Waterfowl Management Area</b>								
<b>Blackrock Ditch</b>								
Maintenance	Operator	120	\$49.37	\$5,924.40	Mower	80	\$90.10	\$7,208.00
	Truck Driver	200	\$45.30	\$9,060.00	3 axle dump truck	120	\$48.03	\$5,763.60
	MCH	260	\$40.16	\$10,441.60	3/4 ton 4x4 pick- up	400	\$13.60	\$5,440.00
	Power Shovel Operator	140	\$52.06	\$7,288.40	Excavator	140	\$108.80	\$15,232.00
					Loader	40	\$37.40	\$1,496.00
					Water truck	60	\$31.23	\$1,873.80
					Side dump	60	\$65.66	\$3,939.60
<b>Subtotal</b>				<b>\$32,714.40</b>				<b>\$40,953.00</b>
<b>Thibaut Pond Maintenance</b>								
Discing Maintenance	Operator	60	\$49.37	\$2,962.20	Low bed/side dump	6	\$65.66	\$393.96
	MCH	100	\$40.16	\$4,016.00	Quadtrac/excavator	20	\$108.80	\$2,176.00
	Truck Driver	12	\$45.30	\$543.60	3/4 ton 4x4 pick- up	200	\$13.60	\$2,720.00
	Power Shovel Operator	40	\$52.06	\$2,082.40	Water truck	6	\$31.23	\$187.38
<b>Subtotal</b>				<b>\$9,604.20</b>				<b>\$5,477.34</b>
<b>Patrol &amp; Flow Changes (River and BWMA)</b>								
A&R patrol and flow compliance	A&R Keeper (1.5 FTE)	3089	\$44.31	\$136,873.59	3/4 ton 4x4 pick- up	3089	\$13.60	\$42,010.40
<b>Subtotal</b>				<b>\$136,873.59</b>				<b>\$42,010.40</b>
<b>BWMA Subtotal</b>				<b>\$169,587.99</b>				<b>\$88,440.74</b>
<b>TOTALS</b>								
<b>River Total</b>				<b>\$216,759.40</b>				
<b>BWMA Total</b>				<b>\$258,028.73</b>				
<b>Total O and M</b>				<b>\$474,788.13</b>				
<b>CPI Adjusted O &amp; M</b>				<b>\$314,783.13</b>				

Baseline Costs (described in Post-Imp)		River	BWMA	Total CPI adjustment
CPI adjustment		\$56,863.00	\$62,798.00	\$119,661.00
2006-2007	4.5%	\$59,421.84	\$65,623.91	\$125,045.75
2007-2008	3.1%	\$61,263.91	\$67,658.25	\$128,922.16
2008-2009	-1.3%	\$60,467.48	\$66,778.69	\$127,246.17
2009-2010	0.9%	\$61,011.69	\$67,379.70	\$128,391.39
2010-2011	0.7%	\$61,438.77	\$67,851.36	\$129,290.13
2011-2012	3.0%	\$63,281.93	\$69,886.90	\$133,168.83
2012-2013	2.1 %	\$64,610.85	\$71,354.53	\$135,965.38
2013-2014	0.4%	\$64,869.30	\$71,639.94	\$136,509.24
2014-2015	1.3%	\$65,712.60	\$72,571.26	\$138,283.86
2015-2016	1.6%	\$66,764.00	\$73,732.40	\$140,496.40
2016-2017	1.8%	\$67,965.75	\$75,059.59	\$143,025.34
2017-2018	3.6%	\$70,412.52	\$77,761.73	\$148,174.25
2018-2019	3.6%	\$72,947.37	\$80,561.15	\$153,508.52
2019-2020	3.2%	\$75,281.69	\$83,139.11	\$158,420.80
2020-2021	1.0%	\$76,034.50	\$83,970.50	\$160,005.00



**Table 3. Hydrologic Monitoring Budget, FY 2021-2022**

	Person days	Labor Costs	Equipment Cost	Total Budgeted Cost July 1, 2021 through June 30, 2022
-	HYDRO OPERATIONS			
River Stations	32	\$ 13,760.00	\$ 6,080.00	\$ 19,840.00
Seasonal Habitat	7	\$ 3,010.00	\$ 280.00	\$ 3,290.00
Off River Lakes & Ponds	9	\$ 3,870.00	\$ 360.00	\$ 4,230.00
Flow to Delta	4	\$ 1,720.00	\$ 3,160.00	\$ 4,880.00
Blackrock Waterfowl	9	\$ 3,870.00	\$ 3,360.00	\$ 7,230.00
Reporting Compliance	6	\$ 2,580.00	\$ 240.00	\$ 2,820.00
-	ENGINEERING			
Reporting Compliance	69	\$ 31,000.00	\$ -	\$ 31,000.00

**Total Hydro  
Budget                      \$73,290.00**

**Table 4. Biological Monitoring Budget, FY 2021-2022**

Biological Monitoring	Days	Inyo Days	LA Days
<b>Blackrock Waterfowl Management Area</b>			
Waterfowl Area Acreage	16	8	8
<b>Total Person Days on Project</b>	<b>16</b>	<b>8</b>	<b>8</b>

**Range Monitoring**

Range monitoring is related to the tasks described in Section 4.6 of the MAMP. Three types of monitoring will take place that are directly related to the management of livestock grazing: irrigated pasture condition scoring, utilization and range trend monitoring. Range monitoring will be conducted by LADWP and is not a shared cost, and therefore is not budgeted for in this work plan (Table 5).

**Table 5. Range Monitoring (LADWP only), FY 2021-2022**

Task	People Days
Utilization	45
Irrigated Pasture Condition	5
Range Trend	50
Analysis and Reporting	20
<b>Total</b>	<b>120</b>

### **Mosquito Abatement**

For fiscal year 2021-2022, the Owens Valley Mosquito Abatement Program (OVMAP) will continue a comprehensive Integrated Mosquito Management Plan (IMMP) when addressing the new and developing sources within the LORP in accordance with its mission of protecting public health. This IMMP consists of an expansion of currently used materials and methods for the surveillance and control of mosquitoes across the OVMAP boundary as well as contingency planning for late season flushing flows. The \$60,000 budget anticipates field surveillance of potential larval habitat for mosquito production, larviciding, pupaciding, adult mosquito surveillance with light traps, mosquito borne disease surveillance, and treatment for adult mosquitoes.

### **Noxious Species Control**

The Inyo/Mono Counties Agricultural Commissioner's Office conducts operations to control and eradicate several different invasive weed species within the LORP boundaries. These invasive weed species include perennial pepperweed (*Lepidium latifolium*), Russian knapweed (*Acroptilon repens*), Canada thistle (*Cirsium arvense*), yellow star thistle (*Centaurea solstitialis*), spotted knapweed (*Centaurea maculosa*), hairy whitetop (*Carderia pubescens*), and heart podded hoary cress (*Carderia draba*). These populations are managed using integrated pest management methods, including mechanical, chemical, and biological controls.

For fiscal year 2021-2022, Inyo County will be responsible for treating weeds in the LORP. The budget for noxious weed control is \$50,000. An increase in perennial pepperweed in the LORP in recent years will require additional funding and efforts to contain the existing population and prevent spread. Additional funding for Inyo County will be sought from outside sources.

Additional weed treatment and surveillance by LADWP and ICWD is described in Section 2. Adaptive Management.

### **Saltcedar Control**

Due to lack of enhanced funding, Inyo County's saltcedar control program has been scaled back. The effort will focus on surveying and the treatment of saltcedar resprouts along the Owens River in the LORP. Inyo County's LORP saltcedar control activities are funded through the Inyo/Los Angeles Water Agreement. LADWP and Inyo County programs will work cooperatively to treat saltcedar, which may include areas in the LORP as resources are available.

## Schedule

Table 6. Schedule of Monitoring and Reporting Activities for FY 2021-2022

Period	Monitoring
August 2-August 31, 2021	LORP Noxious Species Survey
August 15-August 30, 2021	Tamarisk Beetle Survey
September 1 - October 30, 2021	LADWP/Inyo Prepare Draft LORP Report
October 1 - October 30, 2021	Fiscal Year 2019-2020 Work Plan and Budget Reconciliation
October 29, 2021	Transmittal of LORP Accounting Report to Governing Boards
November 1-5, 2021	Measure BWMA Flooded Extent
December 3, 2021	Draft Report transmitted to MOU Parties
December 17, 2021	Public Meeting for Draft LORP Report
December 16, 2020 – February 14, 2022	Fiscal Year 2021-2022 Work Plan and Budget Development
March 1-7, 2022	Measure BWMA Flooded Extent
March 1 – March 31, 2022	Technical Group Meeting to Adopt LORP Annual Report and 2021-2022 Fiscal Year Work Plan and Budget
March 1 – March 31, 2022	Transmittal of LORP Work Plan, Budget, and Schedule to governing boards for approval
March 15 - April 15, 2022	Noxious Species Survey
April 1 – May 31, 2022	LOR Migratory Bird Surveys
May 17 – June 13, 2022	Tamarisk Beetle Survey
May 2 - June 1, 2022	Seasonal Habitat Flow

## Section 2. Adaptive Management

LADWP and Inyo County implemented a number of adaptive management activities in FY 2020-2021 that required associated monitoring. Some of this monitoring will continue in 2021-2022. LADWP and the County will implement additional adaptive management and monitoring in the BWMA in 2021-2022.

Implementation costs of the Interim BWMA Plan are provided below. These costs are to be shared equally between LADWP and Inyo County. All other monitoring associated with adaptive management will be conducted by LADWP and ICWD staff with no offsetting costs.

### Adaptive Management with Additional Costs

#### **Implementation of the Interim BWMA Management and Monitoring Plan**

In FY 2020-2021, LADWP and Inyo County developed a 5-year Interim Management and Monitoring Plan (Interim Plan) to implement a seasonal flooding regime intended to improve habitat conditions in the BWMA. The Plan was supported by all MOU Parties and flooded acreage per the Interim Plan for 2021-2022 was set by the Inyo/Los Angeles Standing Committee meeting on May 26, 2021. LADWP and Inyo County will implement Year 1 of the Interim Plan in 2021-2022, which will include preparation of the Waggoner, Winterton, and Thibaut Units prior to reflooding in fall 2021. This work will be conducted by LADWP and is budgeted at \$75,792.30 (Table 7). Costs will be shared equally by LADWP and Inyo County.

### Adaptive Management without Additional Costs

#### **1. Monitoring Associated with the Interim BWMA Plan**

Per the Interim BWMA Plan, LADWP and the County will conduct additional monitoring concurrent with its implementation on flooded extent, vegetation, and water depths as well as avian monitoring to note response to the new flooding regime. Estimated staff commitments for these monitoring tasks are provided below for the 2021-2022 fiscal year.

- Flooded extent will continue to be measured both to confirm compliance with the Interim Plan and to help describe the effectiveness of seasonal filling and drawdown. Remote sensing will be used to take rough area estimates, and two on-the-ground surveys will be used to map more precisely the extent and location of water found above soil. Water releases will be monitored and reported annually. Staff time commitment for flooded extent monitoring in BWMA is outlined in Table 4, as this task is required under the MAMP also.
- Initial vegetation monitoring will consist of line-point vegetation transects and/or plots in areas expected to have the most potential to produce waterfowl foods. A second objective of monitoring is to evaluate the effectiveness of controlling the expansion of cattails and bulrush in active units. This can be mapped and quantified from a combination of satellite imagery, aerial imagery from UAV, and field training data. Evaluating the vegetative response following shallow flooding will help managers determine the following year's flooding schedule. This task is estimated to require 16 days of LADWP staff time.
- Avian monitoring will be conducted to evaluate the use of BWMA by the habitat indicator species during implementation of the 5-year interim program. Eight seasonal surveys will be conducted September-April in each active unit during implementation of the Interim Plan. It is anticipated that each of these surveys will take 4 people days, given there are three cells to survey each time. It is anticipated that avian monitoring will take 32 people days in 2021-2022 split equally between LADWP and ICWD.

Table 7. BWMA Adaptive Management Costs FY 2021-2022

BWMA Adaptive Management Costs FY 2021-2022								
Labor					Equipment			
Location/Activity	Labor type	Hours	Labor Rate	Total Labor	Equipment Type	Hours	Rate	Total Equip
<b>Repair Diversion #5 and Ditch below Diversion Structure</b>								
	Power Shovel Ope	10	\$50.61	\$506.10	Excavator	10	\$108.80	\$1,088.00
	Operator	40	\$48.89	\$1,955.60	Water truck	20	\$31.23	\$624.60
	Truck Driver	20	\$45.30	\$906.00	3 axle dump truck	40	\$56.50	\$2,260.00
<b>Subtotal</b>				<b>\$3,367.70</b>				<b>\$3,972.60</b>
<b>Waggoner Unit 70% Discing</b>								
	Operator	50	\$48.89	\$2,444.50	Lowbed/side dump	5	\$65.66	\$328.30
	Truck Driver	5	\$45.30	\$226.50	Water truck	50	\$31.23	\$1,561.50
	MCH	50	\$39.77	\$1,988.50	Mower	50	\$90.10	\$4,505.00
					3/4 Ton 4 x 4 Pick-Up	50	\$13.60	\$680.00
<b>Subtotal</b>				<b>\$4,659.50</b>				<b>\$7,074.80</b>
<b>Winterton East Discing</b>								
Cleaning	Operator	20	\$48.89	\$977.80	Water truck	20	\$31.23	\$624.60
	Truck Driver	5	\$45.30	\$226.50	3/4 ton 4x4 pick- up	20	\$13.60	\$272.00
	MCH	20	\$39.77	\$795.40	Mower	20	\$90.10	\$1,802.00
<b>Subtotal</b>				<b>\$1,999.70</b>				<b>\$2,698.60</b>
<b>Winterton South Discing</b>								
	Operator	30	\$48.89	\$1,466.70	Mower	30	\$108.80	\$3,264.00
					3/4 ton 4x4 pick- up	30	\$13.60	\$408.00
	MCH	30	\$39.77	\$1,193.10	Water truck	30	\$31.23	\$936.90
<b>Subtotal</b>				<b>\$2,659.80</b>				<b>\$4,608.90</b>
<b>Repair berm and Center Culverts on Winterton Unit</b>								
	Power Shovel Ope	30	\$50.61	\$1,518.30	Excavator	30	\$108.80	\$3,264.00
	Operator	140	\$48.89	\$6,844.60	Loader	30	\$37.40	\$1,122.00
	Truck Driver	120	\$45.30	\$5,436.00	Side dump	40	\$65.66	\$2,626.40
	MCH	140	\$39.77	\$5,567.80	Bulldozer	30	\$61.65	\$1,849.50
					3/4 ton 4x4 pick- up	140	\$13.60	\$1,904.00
					Water truck	30	\$31.23	\$936.90
					3 axle dump truck	100	\$56.50	\$5,650.00
					Backhoe and trailer	30	\$37.19	\$1,115.70
<b>Subtotal</b>				<b>\$19,366.70</b>				<b>\$18,468.50</b>
<b>Thibaut Berm Repair</b>								
Cleaning	Building Repairma	30	\$45.07	\$1,352.10	Backhoe and trailer	20	\$37.19	\$743.80
	Operator	20	\$48.89	\$977.80	Water truck	10	\$31.23	\$312.30
	Truck Driver	10	\$45.30	\$453.00	3/4 ton 4x4 pick- up	80	\$13.60	\$1,088.00
	MCH	50	\$39.77	\$1,988.50				
<b>Subtotal</b>				<b>\$4,771.40</b>				<b>\$2,144.10</b>

TOTALS	
Repair Diversion #5 and Ditch below Diversion Structure Total	\$7,340.30
Waggoner Unit 70% Discing Total	\$11,734.30
Winterton East Discing Total	\$4,698.30
Winterton South Discing Total	\$7,268.70
Repair Berm and Center Culverts on Winterton Unit Total	\$37,835.20
Thibaut Berm Repair Total	\$6,915.50
<b>Proposed Project Total</b>	<b>\$75,792.30</b>

- During 2021-2022, water depth in active units will be measured by Inyo County coinciding with avian surveys to better understand how water depth influences waterbird habitat use. Patterns of unit drydown will also be monitored to inform whether there are opportunities that could further benefit breeding waterfowl and their broods. Staff time for this task is included in avian monitoring requirements.

It is estimated that additional monitoring and reporting associated with the Interim Plan will require 120 total people days split between LADWP and ICWD staff in the 2021-2022 fiscal year.

## **2. Migratory bird surveys on river**

Migratory bird surveys were proposed on the Lower Owens River for spring 2021. ICWD and LADWP Staff were unable to perform these tasks in 2021 due to workload. However, these surveys will be conducted in spring 2022. LADWP and ICWD will each contribute 10-20 people days each to this effort for a total of 30 total people days.

## **3. Tamarisk beetle study**

LADWP initiated a study in 2020 to track the spread of the tamarisk beetle (*Diorhabda carinulata*) and document its effectiveness in controlling saltcedar in the LORP area. Findings from the first year of the study were summarized in the 2020 LORP Annual Report. This study will continue in 2021, requiring 15 people days by LADWP.

## **4. Noxious species survey and treatment**

Additional noxious weed treatment and surveillance by LADWP and ICWD initiated in 2020-2021 will continue in 2021-2022. ICWD will continue survey work in the LORP (including BWMA) and LADWP will offset survey efforts with treatment of noxious weeds in the LORP area. Estimated staff time includes 30 days from ICWD and 40 days from LADWP.

## **5. Tree recruitment assessment**

One of the objectives of the seasonal habitat flow is to “...fulfill the wetting, seeding, and germination needs of riparian vegetation, particularly willow and cottonwood...” (MOU 1997). The success of the LORP is also gauged by the availability of habitat for MOU Habitat Indicator Species (HIS) some of which require contiguous large patches of riparian forest canopy for forage and nesting. It was estimated that with the re-watering of the channel, the LORP would develop an additional 854 acres of riparian forest; instead willow and cottonwood extent decreased from 449 acres pre-project to 190 acres in 2017. Although riparian tree seedlings and saplings have been recruiting since 2007, the rate of recruitment and subsequent growth has not kept pace with the loss of pre-project forested lands. Without intervention, some LORP goals related to HIS and riparian forest development may not be achieved.

The particular combination of environmental conditions compatible with recruitment has not been rigorously established. In order to correctly predict potential tree establishment locations for native riparian trees including black willow (*Salix gooddingii*), red willow (*Salix laevigata*), or Fremont cottonwood (*Populus fremontii*) we must first understand: 1) conditions which have permitted historic tree establishment during pre-project conditions on the LORP, 2) conditions which have permitted the limited recruitment since project inception, and 3) concurrent biological processes which may be inhibiting current germination and establishment. First, by aging mature trees it is possible to correlate the year of establishment with environmental, hydrologic, and physical conditions that existed at that time. Second, we can learn from post-project recruitment events, recorded by years of rapid

Assessment Survey, by considering a sample of these sites and assessing conditions such as: landform, establishment surface elevation above river stage, soil texture, soil salinity, and the presence and extent of biotic competition or available (competition-free) substrates. Finally, the effects of plant competition on germination, establishment, and sapling development can be explored via vegetation removal on the wetted channel edge or wetted floodplain exposing bare soils with adequate soil moisture and high light exposure to local seed, and/or removing neighboring vegetation from established seedlings or saplings and following their growth response. This last technique will be ineffective during drought years because during low SHF flows, seedlings can only establish at the bank-elevation and not above into the broader floodplain. When established along the bank they can be drowned by flooding, are more likely to experience competition from cattails and tules, and the forest that results is limited to a narrow band along the bank. Thus removals are only valuable during a near-normal runoff year with an adequate habitat flow, when flows can overtop the bank into the floodplain where a broader forest patch could develop. In 2021-2022, these tasks will require 35 field days for sampling, data collection, analysis and reporting. Inyo County will carry out this task.

Table 8 shows a total of 270 people-days budgeted for five adaptive management tasks, with Inyo County contributing 135 people-days and Los Angeles contributing 135 days.

Work planned includes:

**Table 8. Adaptive Management Monitoring, FY 2020-2021**

Task #	Biological Monitoring	Days	Inyo Days	LA Days
1	BWMA Interim Management and Monitoring Plan - Monitoring and Reporting	120	60	60
2	Migratory bird surveys on river	30	10	20
3	Tamarisk beetle study	15	0	15
4	Noxious species survey and treatment	70	30	40
5	Tree recruitment assessment	35	35	0
<b>Total Person Days</b>		<b>270</b>	<b>135</b>	<b>135</b>