## TABLE OF CONTENTS

## Volume 1

Section		Page
EXECU'	ΓΙVE SUMMARY	S-1
1.0	NTRODUCTION	1-1
1.1	ORIGIN OF THE PROJECT	1-1
1.2	LORP GOALS AND ELEMENTS	
1.3	ENVIRONMENTAL REVIEW	
1.4	PERMITS AND OTHER APPROVALS REQUIRED	
2.0	PROJECT DESCRIPTION (PROPOSED ACTION)	2-1
2.1	INTRODUCTION	2-1
2.2	ADMINISTRATION OF THE PROJECT	2-3
2.3	LOWER OWENS RIVER RIVERINE-RIPARIAN SYSTEM	2-9
2.4	DELTA HABITAT AREA, INCLUDING PUMP STATION	2-27
2.5	BLACKROCK WATERFOWL HABITAT AREA	
2.6	OFF-RIVER LAKES AND PONDS	2-48
2.7	THREATENED AND ENDANGERED SPECIES	2-51
2.8	LAND MANAGEMENT	
2.9	RECREATION MANAGEMENT	
2.10	MONITORING AND ADAPTIVE MANAGEMENT	2-66
3.0 OVI	ERVIEW OF IMPACT ASSESSMENT	3-1
3.1	PURPOSE AND FOCUS OF THE EIR/EIS	3-1
3.2	IMPACT ASSESSMENT APPROACH	
3.3	KEY CEQA REQUIREMENTS AND CONSIDERATIONS	3-3
3.4	KEY NEPA REQUIREMENTS AND CONSIDERATIONS	3-4
3.5	ISSUE AREAS NOT CONSIDERED IN THE EIR/EIS	3-5
4.0 RIV	ERINE-RIPARIAN SYSTEM	4-1
4.1	MOU GOALS	4-1
4.2	PROPOSED PROJECT	
4.3	SURFACE WATER HYDROLOGY	
4.4	WATER QUALITY	
4.5	WETLANDS AND RIPARIAN HABITAT	
4.6	GAME AND NATIVE FISH	
4.7	WILDLIFE, INCLUDING SPECIAL STATUS SPECIES	
4.8	CULTURAL RESOURCES	
4.9	AIR QUALITY	4-57
5.0 DIV	ERSION, PUMP STATION, POWER LINE, AND ROAD SURFACING	5-1
5.1	VEGETATION TYPES, INCLUDING WETLANDS	
5.2	FISH AND WILDLIFE	
5.3	AIR QUALITY	
5.4	CULTURAL RESOURCES	5-16

# **TABLE OF CONTENTS (continued)**

Section	Page
6.0 DELTA HABITAT AREA	6-1
6.1 EXISTING CONDITIONS	6-1
	6-17
	6-17
	CENT TO THE BRINE POOL6-42
	ID SALTCEDAR6-43
	6-44
7.0 BLACKROCK WATERFOWL HABITAT AREA	7-1
7.1 WETLANDS AND RIPARIAN HABITATS	7-1
7.2 FISH AND WILDLIFE	7-19
7.3 CULTURAL RESOURCES	7-20
7.4 AIR QUALITY	7-23
8.0 OFF RIVER LAKES AND PONDS	8-1
8.1 BACKGROUND INFORMATION	8-1
	8-1
	8-3
8.4 POTENTIAL IMPACTS	8-4
9.0 LAND MANAGEMENT PLAN	9-1
	9-1
	9-1
	9-5
9.4 OTHER IMPACTS THAT ARE CONSIDERE	ED NEGLIGIBLE 9-8
10.0 IMPACTS ASSOCIATED WITH THE LORP AS A	WHOLE10-1
	10-1
	10-10
10.7 GROWTH INDUCING EFFECTS, INCLUDI	NG INDIRECT IMPACTS10-33
11.0 ALTERNATIVES	11-1
11.1 REQUIREMENTS TO EVALUATE ALTERN	NATIVES11-1
11.2 EVALUATION OF NO PROJECT ALTERNA	ATIVE (CEQA AND NEPA)11-2
11.3 EVALUATION OF CEQA ALTERNATIVES	11-2
11.4 EVALUATION OF NEPA ALTERNATIVES	11-7
12.0 CUMULATIVE IMPACTS	12-1
12.1 CUMULATIVE IMPACT REQUIREMENTS	12-1
12.2 ENVIRONMENTAL IMPACTS OF THE LOI	RP12-1
	L CUMULATIVE IMPACTS12-4
	12-11
12.5 CUMULATIVE IMPACTS TO THE WATER	SUPPLY OF THE CITY OF LOS ANGELES

# **TABLE OF CONTENTS (continued)**

Section			Page
10.6		WALLEST TO THE RESIDENCE OF THE PROPERTY OF TH	
12.6		IULATIVE IMPACTS RELATED TO THE WILLOW FLYCATCHER RECOV	
13.0 CON	NSISTE	ENCY WITH INYO COUNTY GENERAL PLAN	13-1
14.0 OTH	ER FE	DERAL IMPACT CONSIDERATIONS	14-1
14.1	REL	ATIONSHIP BETWEEN SHORT TERM USES OF RESOURCES AND THE	
		NTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	
14.2 14.3		ETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES IRONMENTAL JUSTICE	
14.3		ODPLAIN MANAGEMENT	
14.5		LANDS PROTECTION	
14.6		ANGERED SPECIES ACT AND MIGRATORY BIRD TREATY ACT	
14.7		AN AIR ACT	
14.8 14.9		AN AIR ACTIONAL HISTORIC PRESERVATION ACT	
		GENCIES AND PERSONS CONTACTED	
16.0 LIST	Γ OF P	REPARERS	16-1
17.0 ACF	RONYN	MS AND ABBREVIATIONS	17-1
		CES	
APPEND	IX A	Figures	
APPEND	IX B	Letters of Comment on the Notice of Preparation	
APPEND	IX C	Draft Inyo County/Los Angeles Standing Committee Policies Concerning Op and Funding of the LORP	perations
APPEND	IX D	Birds Species of the LORP Project Area	
APPEND	IX E	Hydraulic Modeling Analysis of Delta Flow Alternatives – Ecosystem Science	es
APPEND	IX F	Background Information on Cultural Resources	
APPEND	IX G	Utilization Methods	
APPEND	ΙΧΗ	Scope of Work for the Implementation of Mitigation Measure PS-1	
APPEND	IX I	Eastern Sierra Weed Management Area Strategic Plan	
<b>Volume</b> 2	<u>2</u>		
APPEND	_	Agency and Public Comments on the Draft EIR/EIS	
Volume 3	<u>3</u>		
Appendix	K	Responses to Comments on the Draft EIR/EIS	

## LIST OF TABLES

Table Number		Page	
1-1	Permits and Approvals Required	1-10	
2-1A	Estimated LORP Implementation Costs	2-5	
2-1B	Estimated LORP Post-Implementation Costs	2-7	
2-1C	LADWP Funding Commitments	2-7	
2-2	LORP Funding Currently available to Support the County's Share if the Costs of the I	ORP2-8	
2-3	Proposed LORP Implementation Schedule	2-9	
2-4	Summary of Current Spillgate Operations in the LORP Project Area	2-12	
2-5	LORP Habitat Indicator Species: Riverine-Riparian System	2-15	
2-6	Flow and Water Quality Monitoring Stations	2-16	
2-7	Water Quality Monitoring Stations.	2-17	
2-8	Water Quality Monitoring Frequency	2-18	
2-9	Water Quality and Fish Condition Thresholds	2-18	
2-10	Estimate of Water Released to the River for Various Seasonal Habitat Flows	2-22	
2-11	Summary of Proposed Pulse Flows to the Delta	2-32	
2-12	Estimated Construction Quantities	2-38	
2-13	Estimated Construction Duration and Workforce.	2-38	
2-14	Maximum Area of Potential Flooding and Adjacent Habitat Zones	2-40	
2-15	Existing and Future Water Requirements in the Blackrock Waterfowl Habitat Area	2-46	
2-16	Summary of Physical Improvements at Blackrock Waterfowl Habitat Area	2-46	
2-17	Leases Included in the LORP Land Management Plan.	2-54	
2-18	Relationship Between MOU Goals and LORP Monitoring Components	2-75	
2-19	Riverine-Riparian System Adaptive Management Measures	2-79	
2-20	Delta Habitat Area Adaptive Management Measures	2-81	
2-21	Blackrock Waterfowl Habitat Area Adaptive Management Measures	2-83	
2-22	Off-River Lakes and Ponds & Grazing Adaptive Management Measures	2-84	
4-1	Summary of Key Spillgates Contributing Flow in the River	4-6	
4-2	Summary of Water Surface Elevation Modeling	4-8	
4-3	Effect of In-Channel Vegetation on Hydraulics	4-9	

# LIST OF TABLES (continued)

Table I	Number	Page
4-4	Predicted Channel Bed Elevation Changes	4-9
4-5	Observed Flow Velocities at Mazourka Canyon Road During 1993 Field Experiment	4-10
4-6	Water Quality Objectives that Apply to the Lower Owens River	4-10
4-7	Summary of Water Quality Data from the Lower River and Key Spillgates, 1995-96	4-13
4-8	Summary of Muck Measurements at 40 Sampling Locations on the Lower Owens River	4-16
4-9	Chemical Characteristics of Muck Samples along the River, 1999	4-19
4-10	Water Quality along the Lower Owens River during the 1993 Experimental Releases	4-20
4-11	Existing and Predicted Vegetation Types along the River	4-22
4-12	Fish in the Wetted Reach of the River and the Off-River Lakes and Ponds	4-32
4-13	Summary of Bird Census along the Lower Owens River in 2000	4-43
4-14A	Bird Species Diversity along the Lower Owens River in 2000	4-43
4-14B	Summary of Field Survey Findings from the 2000 Cultural Resources Inventory	4-50
4-14C	Summary of Field Survey Findings from the 2003 Cultural Resources Inventory	4-52
4-14D	Summary of Findings from the 2004 Historic Resources Evaluation.	4-53
4-15	Estimated Emissions from Channel Clearing.	4-58
5-1	Temporary and Permanent Habitat Disturbances due to Construction at the Pump Station.	5-6
5-2	Habitat Disturbances due to Flooding of the River Channel by the Forebay	5-8
5-3	Estimated Construction Emissions for the LORP	5-15
6-1	Areas of Land Types, Delta Habitat Area	6-2
6-2	Vegetation Types Mapped in the Delta Habitat Area – 2000	6-6
6-3	Vegetation Types Mapped in the Delta Habitat Area – 1996, 1999, 2000	6-9
6-4	Estimated Average Inflow to the Delta Habitat Area for Selected Periods	6-11
6-5	Wetlands and Water Areas in the Delta Habitat Area, 1944 – 2000	6-14
6-6	Special Status Species that may use the Owens River Delta Habitat Area	6-16
6-7	Average monthly flows at the Keeler gage 1927/28 – 2000/01 Water Years	6-18
6-8	Average monthly flows at the Keeler gage 2001/02 and 2002/03 Water Years	6-19
6-9	Summary of Existing and Proposed Flows at Keeler Bridge and Below the Pump Station Location	6-28
6-10	Estimate of Seasonal Habitat Flows that Reach the Pump Station Moderate Channel Loss Assumption	6-32

# LIST OF TABLES (continued)

Table	Number	Page
6-11	Estimate of Seasonal Habitat Flows that Reach the Pump Station Lower Channel Loss Assumption	6-33
6-12	Summary of Modeled Breakout Flows to the Overflow Channel	6-38
7-1	Existing Vegetation Types in the Management Units of Blackrock Waterfowl Habitat Area	a7-6
7-2	Existing Vegetation Types in the Areas Within Which Flooding is Proposed	7-11
7-3	Temporary and Long-term Wetlands Conversions Expected from First Two Cycles	7-12
7-4	Estimated Construction Emissions for the Blackrock Waterfowl Habitat Area	7-24
8-1	Fish in Off-River Lakes and Ponds	8-2
9-1	Summary of Riparian Pastures and Exclosures	9-4
10-1	Amount of Water Released and Channel Losses During Seasonal Habitat Flows	10-25
10-2	Estimates of Channel Losses During Baseflows, Pulse Flows, and Seasonal Habitat Flows	10-26
10-3	Summary of Proposed Pulse and Baseflows to the Delta	10-27
10-4	Estimates of Water Requirements to Maintain Off-River Lakes and Ponds	10-28
10-5	Water Requirements of the LORP	10-29
10-6	Summary of LADWP Water Supplies	10-30
10-7	Summary of Current LADWP In-Valley Water Demands	10-32
11-1	Summary of CEQA Alternatives	11-3
11-2	Summary of NEPA Alternatives	11-8
11-3	Estimate of Seasonal Habitat Flows that Reach the 150 cfs Pump Station and the Delta wit 200 cfs Release at the River Intake Only - Moderate Channel Loss Assumption	
11-4	Estimate of Seasonal Habitat Flows that Reach the 150 cfs Pump Station and the Delta wit 200 cfs Release at the River Intake Only – Lower Channel Loss Assumption	
11-5	Summary of Anticipated Breakout Flows to the Overflow Channel	11-17
11-6	Estimate of Seasonal Habitat Flows that Reach the Pump Station and the Delta with 150 at cfs Pump Stations and Modified 200 cfs Seasonal Habitat Flow Release	
12-1	Mitigation Measures Listed in the 1991 EIR	12-8
12-2	Summary of Cumulative Impacts	12-12
14-1	Summary of Impacts to Wetlands	14-3

#### LIST OF FIGURES

(Included in Appendix A in Volume 1 unless otherwise noted)

### **Figure Number – Title**

- 1-1 Lower Owens River Project Area
- 2-1a-e Riverine-Riparian System Features
- 2-2 River Channel to be Cleared
- 2-3 Locations of Beaver Dams Removed in 2002
- 2-4 Location of Pump Station and Delta Habitat Area from the MOU
- 2-5 Owens River Delta Habitat Area
- 2-6 Land Ownership in and Near the Delta Habitat Area
- 2-7 Overview of the Diversion and Pump Station
- 2-7A –Owens Lake Dust Control Project Facilities
- 2-8 Views of the Diversion, Spillway, and By-pass
- 2-9 Service Roads at the Pump Station
- 2-10 Proposed Power Line
- 2-11 Plan View of the Pump Station
- 2-12 Plan View of the Pump Sump
- 2-13 Side View of the Pump Station
- 2-14 Limits of Inundation above the Pump Station
- 2-15 Management Units in the Blackrock Waterfowl Habitat Area
- 2-16 Leases in the LORP Project Area
- 2-16A Location of Seeps and Springs
- 2-16B Walk Through
- 2-16C Walk Over
- 2-16D Fence Wings
- 2-16E Channel Fence Section
- 2-16F Cattle Guard with Gate
- 2-17 Elk Fence Crossings to be Used on LADWP Leases in the LORP Project Area
- 2-18 Twin Lakes Lease
- 2-19 Blackrock Lease
- 2-20 Thibaut Lease
- 2-21 Island Lease
- 2-22 Lone Pine Lease
- 2-23 Delta Lease

### **LIST OF FIGURES (continued)**

### Figure Number – Title

- 2-24 Roads within the Project Area
- 2-25 Example Habitat Development Survey Sampling Site (see Section 2.10.1)
- 2-26 Example Fish Habitat Survey Sampling Plot (see Section 2.10.1)
- 5-1 Vegetation at the Pump Station Site
- 5-2 Limits of Disturbance at the Pump Station Site
- 6-1 Delta Habitat Area
- 6-2 Land Types in the Delta Habitat Area
- 6-3 Wetlands Identified by Jones & Stokes (1996)
- 6-4 Wetlands Mapped by White Horse Associates 1999 Conditions
- 6-5 Delta Habitat Conditions 1944
- 6-6 Delta Habitat Conditions 1967
- 6-7 Delta Habitat Conditions 1981
- 6-8 Delta Habitat Conditions 1992
- 6-9 Delta Habitat Conditions 1993
- 6-10 Delta Habitat Conditions 1996
- 6-11 Delta Habitat Conditions 2000
- 7-1 Existing Vegetation in the Areas to be Flooded Drew and Winterton Units
- 7-2 Existing Vegetation in the Areas to be Flooded Waggoner Unit
- 7-3 Existing Vegetation in the Areas to be Flooded Thibaut Unit
- 11-1 Delta Habitat Area with Physical Modifications
- 11-2 Alternative Sediment Stockpile Sites

## LIST OF CHARTS

Chart Number		Page	
2-1	Nomograph of Seasonal Habitat Flows.	2-20	
2-1A	Owens Valley Annual Runoff (1950-1951 to 1999-2000 Water Years)	2-20	
2-2	Examples of Ramping of Seasonal Habitat Flows	2-21	
4-1	Median Monthly Flow at Key Spillgates, 1986-2001	4-4	
4-2	Annual Discharge from Key Spillgates, 1986-2001	4-4	
4-3	Average Annual Flows at Keeler Bridge, 1986-2001	4-5	
4-4	Monthly Flows at Keeler Bridge, 1986-2001	4-5	
4-5	Water Quality along the Lower Owens River, 1999.	4-18	
4-6	Dissolved Oxygen at Mazourka Cyn Rd during 1993 Experimental Study	4-24	
4-7	Temperature at Mazourka Cyn Rd during 1993 Experimental Study	4-24	
4-8	Dissolved Oxygen at Keeler Bridge during 1993 Experimental Study	4-25	
4-9	Temperature at Keeler Bridge during 1993 Experimental Study	4-25	
6-1	Area of Wetlands for 1993, 1996, 1999, and 2000 versus time	6-21	
6-2	Area of Wetlands for 1993, 1996, 1999, and 2000 versus previous year flow	6-21	
6-3	Existing (1986-2001) and Proposed Flows at the Pump Station Site	6-29	
10-1	Summary of LADWP Water Supplies	10-31	