



LOWER COLORADO RIVER Multi-Species Conservation Program

Final Programmatic Environmental Impact Statement/ Environmental Impact Report

Volume I



U.S. Department of the Interior
Bureau of Reclamation and U.S. Fish and Wildlife Service
The Metropolitan Water District of Southern California

December 17, 2004



1 **FINAL PROGRAMMATIC EIS/EIR**
2 **LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM**
3 **VOLUME I**

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11 Prepared by:
12 U.S. Department of the Interior
13 Bureau of Reclamation (Reclamation) and Fish and Wildlife Service (Service)
14 The Metropolitan Water District of Southern California (Metropolitan)
15

16 This Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the impacts of
17 implementing the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) Conservation
18 Plan and issuing a section 10(a)(1)(B) (incidental take) permit based on this plan. The planning area
19 extends from the full pool elevation of Lake Mead to the Southerly International Boundary with Mexico.
20 The Conservation Plan is habitat-based and is intended to both promote the recovery of species listed as
21 threatened or endangered under the Endangered Species Act of 1973, as amended, and reduce the
22 possibility that other selected species may become listed along the LCR. The EIS/EIR has been prepared
23 in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on
24 Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA; Reclamation's
25 Draft National Environmental Policy Handbook; the California Environmental Quality Act (CEQA) of
26 1970, as amended; and the State CEQA Guidelines, as amended. Reclamation and the Service are the lead
27 agencies for compliance with NEPA, and Metropolitan is the lead agency for compliance with CEQA.

28 This joint EIS/EIR is a programmatic document intended to identify to agency decisionmakers and the
29 public the potential range of impacts associated with the implementation of the proposed action,
30 including significant and beneficial environmental effects. Additionally, the EIS/EIR will serve as the
31 basis for future project-specific NEPA and CEQA compliance documents that will be required once
32 individual conservation projects under the LCR MSCP are more fully defined. The proposed action does
33 not revisit the authorization of any ongoing covered activity. This EIS/EIR analyzes the impacts of the
34 proposed action and three additional alternatives, including no action, development of a conservation
35 plan that addresses Federally listed species only, and off-site conservation. It also evaluates the
36 cumulative impacts of the proposed action in combination with other projects.

37 Approximately 360 copies of the Draft EIS/EIR were distributed to agencies, public libraries, Indian
38 tribes, organizations, and individuals for review during a 60-day period ending on August 18, 2004.
39 Comment letters and verbal comments provided during three public hearings held in Henderson,
40 Nevada; Blythe, California; and Phoenix, Arizona are included in LCR MSCP Volume V, along with
41 responses to comments. Volume I, the Final EIS/EIR, incorporates changes to the Draft EIS/EIR made in
42 response to comments and text clarifications. Volume II is the Final LCR MSCP Habitat Conservation
43 Plan, Volume III is the Final Biological Assessment, and Volume IV contains appendices to these four
44 volumes. For further information regarding this EIS/EIR, contact:

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION	1-1
1.1 Background	1-1
1.1.1 Development of the LCR MSCP	1-1
1.1.2 ESA Provisions	1-2
1.1.3 Overview of the Proposed Action	1-2
1.1.4 Use of the EIS/EIR	1-5
1.1.4.1 U.S. Fish and Wildlife Service	1-5
1.1.4.2 U.S. Bureau of Reclamation	1-5
1.1.4.3 The Metropolitan Water District of Southern California	1-5
1.2 Purpose of and Need for the Proposed Action	1-6
1.2.1 Need for the Proposed Action	1-6
1.2.2 Actions for Which ESA Coverage is Requested	1-7
1.2.2.1 Federal Ongoing and Future Flow-Related and Non-Flow-Related Actions	1-8
1.2.2.2 Non-Federal Ongoing and Future Flow-Related and Non-Flow-Related Actions	1-12
1.2.3 Purpose of the EIS/EIR	1-16
1.2.4 Scope of the EIS/EIR	1-17
1.3 Relationship to other LCR Documents Prepared Pursuant to the Endangered Species Act	1-18
1.4 Required Actions and Permits	1-19
1.4.1 Actions Supported by this EIS/EIR	1-19
1.4.1.1 Federal Actions	1-19
1.4.1.2 Non-Federal Actions	1-20
1.4.1.3 Cooperating, Responsible, and Trustee Agency Actions	1-20
1.4.2 Future Permits and Approvals Required to Implement Specific LCR MSCP Projects	1-20
1.5 Scoping and Public Involvement	1-21
1.6 Document Organization	1-22
2.0 ALTERNATIVES	2-1
2.1 Alternatives Carried forward for Detailed Analysis	2-3
2.1.1 Alternative 1: Implementation of Proposed Conservation Plan and Issuance of Section 10(a)(1)(B) Permit (Conservation Plan)	2-3
2.1.1.1 Overview	2-3
2.1.1.2 Geographic Scope of the Project	2-38
2.1.1.3 Conservation Concepts	2-40
2.1.1.4 Conservation Area Site Selection, Design, and Management	2-66

Table of Contents

2.1.1.5	General Species Conservation Measures.....	2-79
2.1.1.6	Timing of the Implementation of Conservation Measures	2-92
2.1.1.7	Monitoring and Research.....	2-94
2.1.1.8	Adaptive Management	2-97
2.1.1.9	Conceptual Habitat Conservation Actions.....	2-99
2.1.2	Alternative 2: No Action Alternative	2-101
2.1.3	Alternative 3: Implementation of a Conservation Plan Addressing ESA-Listed Species Only and Issuance of a Section 10(a)(1)(B) Permit (ESA-Listed Species Only)	2-102
2.1.4	Alternative 4: Off-Site Conservation and Issuance of a Section 10(a)(1)(B) Permit (Off-Site Conservation)	2-103
2.1.4.1	Lower Muddy and Virgin Rivers	2-111
2.1.4.2	Lower Bill Williams River.....	2-113
2.1.4.3	Lower Gila River.....	2-114
2.2	Alternatives Considered but Eliminated from Detailed Analysis	2-115
2.2.1	Operational or Structural Changes to the Lower Colorado River	2-115
2.2.1.1	Alternative A: Re-Operation of the Lower Colorado River without Modifications to Existing Structures.....	2-115
2.2.1.2	Alternative B: Dam Removal.....	2-119
2.2.1.3	Alternative C: Removal of Banklines, Levees, and other Modifications to the Lower Colorado River	2-120
2.2.1.4	Alternative D: Use of Conserved Water for Environmental Uses on the Lower Colorado River	2-122
2.2.2	Alternative Conservation Plans	2-122
2.2.2.1	Alternative E: Larger-Scale Conservation Plan	2-122
2.2.2.2	Alternative F: Shorter or Longer Permit Duration.....	2-123
3.0	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	3.0-1
3.1	Aesthetics	3.1-1
3.1.1	Affected Environment.....	3.1-1
3.1.1.1	Lower Colorado River.....	3.1-1
3.1.1.2	Muddy River/Moapa Valley and Virgin River.....	3.1-3
3.1.1.3	Bill Williams River.....	3.1-3
3.1.1.4	Lower Gila River.....	3.1-3
3.1.2	Environmental Consequences.....	3.1-3
3.1.2.1	Alternative 1: Proposed Conservation Plan.....	3.1-4
3.1.2.2	Alternative 2: No Action Alternative.....	3.1-5
3.1.2.3	Alternative 3: Listed Species Only.....	3.1-6
3.1.2.4	Alternative 4: Off-Site Conservation	3.1-6
3.2	Agricultural Resources.....	3.2-1
3.2.1	Affected Environment	3.2-1
3.2.1.1	Lower Colorado River.....	3.2-1
3.2.1.2	Muddy River/Moapa Valley and Virgin River.....	3.2-7

3.2.1.3	Bill Williams River	3.2-7
3.2.1.4	Lower Gila River	3.2-8
3.2.2	Environmental Consequences	3.2-8
3.2.2.1	Alternative 1: Proposed Conservation Plan	3.2-9
3.2.2.2	Alternative 2: No Action Alternative	3.2-11
3.2.2.3	Alternative 3: Listed Species Only	3.2-12
3.2.2.4	Alternative 4: Off-Site Conservation	3.2-12
3.3	Air Quality	3.3-1
3.3.1	Affected Environment	3.3-1
3.3.2	Environmental Consequences	3.3-4
3.3.2.1	Alternative 1: Proposed Conservation Plan	3.3-4
3.3.2.2	Alternative 2: No Action Alternative	3.3-8
3.3.2.3	Alternative 3: Listed Species Only	3.3-9
3.3.2.4	Alternative 4: Off-Site Conservation	3.3-10
3.4	Biological Resources	3.4-1
3.4.1	Affected Environment	3.4-1
3.4.1.1	Lower Colorado River	3.4-1
3.4.1.2	Muddy River/Moapa Valley and Virgin River	3.4-16
3.4.1.3	Bill Williams River	3.4-28
3.4.1.4	Lower Gila River	3.4-29
3.4.2	Environmental Consequences	3.4-30
3.4.2.1	Alternative 1: Proposed Conservation Plan	3.4-31
3.4.2.2	Alternative 2: No Action Alternative	3.4-44
3.4.2.3	Alternative 3: Listed Species Only	3.4-46
3.4.2.4	Alternative 4: Off-Site Conservation	3.4-46
3.5	Cultural Resources	3.5-1
3.5.1	Affected Environment	3.5-5
3.5.1.1	Lower Colorado River	3.5-7
3.5.1.2	Muddy River/Moapa Valley and Virgin River	3.5-15
3.5.1.3	Bill Williams River	3.5-15
3.5.1.4	Lower Gila River	3.5-16
3.5.2	Environmental Consequences	3.5-16
3.5.2.1	Alternative 1: Proposed Conservation Plan	3.5-16
3.5.2.2	Alternative 2: No Action Alternative	3.5-19
3.5.2.3	Alternative 3: Listed Species Only	3.5-19
3.5.2.4	Alternative 4: Off-Site Conservation	3.5-19
3.6	Energy and Depletable Resources	3.6-1
3.7	Environmental Justice	3.7-1
3.7.1	Affected Environment	3.7-1
3.7.1.1	Lower Colorado River	3.7-3
3.7.1.2	Muddy River/Moapa Valley and Virgin River	3.7-3
3.7.1.3	Bill Williams River	3.7-3
3.7.1.4	Lower Gila River	3.7-3
3.7.2	Environmental Consequences	3.7-3
3.7.2.1	Alternative 1: Proposed Conservation Plan	3.7-4
3.7.2.2	Alternative 2: No Action Alternative	3.7-6

Table of Contents

	3.7.2.3	Alternative 3: Listed Species Only.....	3.7-8
	3.7.2.4	Alternative 4: Off-Site Conservation.....	3.7-9
3.8		Hazards and Hazardous Materials.....	3.8-1
	3.8.1	Affected Environment.....	3.8-1
	3.8.1.1	Lower Colorado River.....	3.8-1
	3.8.1.2	Muddy River/Moapa Valley and Virgin River.....	3.8-4
	3.8.1.3	Bill Williams River.....	3.8-4
	3.8.1.4	Lower Gila River.....	3.8-4
	3.8.2	Environmental Consequences.....	3.8-4
	3.8.2.1	Alternative 1: Proposed Conservation Plan.....	3.8-5
	3.8.2.2	Alternative 2: No Action Alternative.....	3.8-6
	3.8.2.3	Alternative 3: Listed Species Only.....	3.8-8
	3.8.2.4	Alternative 4: Off-Site Conservation.....	3.8-8
3.9		Hydrology and Water Quality.....	3.9-1
	3.9.1	Affected Environment.....	3.9-1
	3.9.1.1	Lower Colorado River.....	3.9-1
	3.9.1.2	Muddy River/Moapa Valley and Virgin River.....	3.9-11
	3.9.1.3	Bill Williams River.....	3.9-13
	3.9.1.4	Lower Gila River.....	3.9-14
	3.9.2	Environmental Consequences.....	3.9-15
	3.9.2.1	Alternative 1: Proposed Conservation Plan.....	3.9-16
	3.9.2.2	Alternative 2: No Action Alternative.....	3.9-18
	3.9.2.3	Alternative 3: Listed Species Only.....	3.9-19
	3.9.2.4	Alternative 4: Off-Site Conservation.....	3.9-20
3.10		Indian Trust Assets.....	3.10-1
	3.10.1	Affected Environment.....	3.10-1
	3.10.1.1	Lower Colorado River.....	3.10-1
	3.10.1.2	Muddy River/Moapa Valley and Virgin River.....	3.10-3
	3.10.1.3	Bill Williams River.....	3.10-4
	3.10.1.4	Lower Gila River.....	3.10-4
	3.10.2	Environmental Consequences.....	3.10-4
	3.10.2.1	Alternative 1: Proposed Conservation Plan.....	3.10-4
	3.10.2.2	Alternative 2: No Action Alternative.....	3.10-5
	3.10.2.3	Alternative 3: Listed Species Only.....	3.10-6
	3.10.2.4	Alternative 4: Off-Site Conservation.....	3.10-6
3.11		Land Use.....	3.11-1
	3.11.1	Affected Environment.....	3.11-1
	3.11.1.1	Existing Land Uses.....	3.11-1
	3.11.1.2	Zoning and Land Use Designations.....	3.11-3
	3.11.1.3	General and Comprehensive Plans.....	3.11-3
	3.11.1.4	Other Conservation Plans.....	3.11-4
	3.11.2	Environmental Consequences.....	3.11-4
	3.11.2.1	Alternative 1: Proposed Conservation Plan.....	3.11-5
	3.11.2.2	Alternative 2: No Action Alternative.....	3.11-6
	3.11.2.3	Alternative 3: Listed Species Only.....	3.11-7
	3.11.2.4	Alternative 4: Off-Site Conservation.....	3.11-7

3.12	Noise	3.12-1
3.12.1	Affected Environment	3.12-4
3.12.1.1	Lower Colorado River	3.12-5
3.12.1.2	Muddy River/Moapa Valley and Virgin River	3.12-6
3.12.1.3	Bill Williams River	3.12-6
3.12.1.4	Lower Gila River	3.12-6
3.12.2	Environmental Consequences	3.12-7
3.12.2.1	Alternative 1: Proposed Conservation Plan	3.12-7
3.12.2.2	Alternative 2: No Action Alternative	3.12-9
3.12.2.3	Alternative 3: Listed Species Only	3.12-10
3.12.2.4	Alternative 4: Off-Site Conservation	3.12-10
3.13	Population and Housing	3.13-1
3.14	Public Utilities and Services	3.14-1
3.15	Recreation	3.15-1
3.15.1	Affected Environment	3.15-1
3.15.1.1	Lower Colorado River	3.15-1
3.15.1.2	Muddy River/Moapa Valley and Virgin River	3.15-5
3.15.1.3	Bill Williams River	3.15-5
3.15.1.4	Lower Gila River	3.15-5
3.15.2	Environmental Consequences	3.15-5
3.15.2.1	Alternative 1: Proposed Conservation Plan	3.15-5
3.15.2.2	Alternative 2: No Action Alternative	3.15-7
3.15.2.3	Alternative 3: Listed Species Only	3.15-7
3.15.2.4	Alternative 4: Off-Site Conservation	3.15-7
3.16	Socioeconomics	3.16-1
3.16.1	Affected Environment	3.16-1
3.16.1.1	Economic Activity	3.16-2
3.16.2	Environmental Consequences	3.16-5
3.16.2.1	Alternative 1: Proposed Conservation Plan	3.16-6
3.16.2.2	Alternative 2: No Action Alternative	3.16-12
3.16.2.3	Alternative 3: Listed Species Only	3.16-12
3.16.2.4	Alternative 4: Off-Site Conservation	3.16-13
3.17	Topography, Geology, Soils, and Mineral Resources	3.17-1
3.17.1	Affected Environment	3.17-1
3.17.1.1	Lower Colorado River	3.17-1
3.17.1.2	Muddy River/Moapa Valley and Virgin River	3.17-2
3.17.1.3	Bill Williams River	3.17-2
3.17.1.4	Lower Gila River	3.17-2
3.17.2	Environmental Consequences	3.17-3
3.17.2.1	Alternative 1: Proposed Conservation Plan	3.17-3
3.17.2.2	Alternative 2: No Action Alternative	3.17-3
3.17.2.3	Alternative 3: Listed Species Only	3.17-4
3.17.2.4	Alternative 4: Off-Site Conservation	3.17-4
3.18	Transboundary Impacts	3.18-1
3.18.1	Affected Environment	3.18-1
3.18.1.1	Environmental Resources	3.18-1

Table of Contents

3.18.1.2	United States' 1944 Water Treaty Obligation.....	3.18-3
3.18.2	Environmental Consequences.....	3.18-4
3.18.2.1	Alternative 1: Proposed Conservation Plan.....	3.18-5
3.18.2.2	Alternative 2: No Action Alternative.....	3.18-6
3.18.2.3	Alternative 3: Listed Species Only.....	3.18-7
3.18.2.4	Alternative 4: Off-Site Conservation.....	3.18-7
3.19	Transportation.....	3.19-1
4.0	CUMULATIVE IMPACTS.....	4-1
4.1	Cumulative Impact Methodology.....	4-1
4.2	Analysis of Cumulative Impacts.....	4-2
4.2.1	Future Covered Activities.....	4-2
4.2.2	Urban Development Projects.....	4-8
4.2.3	Habitat Enhancement Projects.....	4-20
4.2.4	Other Conservation and Restoration Projects.....	4-25
4.2.5	Other Projects.....	4-26
4.3	Impacts by Resource.....	4-31
4.3.1	Aesthetics.....	4-31
4.3.2	Agricultural Resources.....	4-32
4.3.3	Air Quality.....	4-32
4.3.4	Biological Resources.....	4-33
4.3.5	Cultural and Historic Resources.....	4-34
4.3.6	Energy and Depletable Resources.....	4-35
4.3.7	Environmental Justice.....	4-35
4.3.8	Hazards and Hazardous Materials.....	4-37
4.3.9	Hydrology and Water Quality.....	4-37
4.3.10	Indian Trust Assets.....	4-37
4.3.11	Land Use.....	4-37
4.3.12	Noise.....	4-37
4.3.13	Population and Housing.....	4-37
4.3.14	Public Utilities and Services.....	4-37
4.3.15	Recreation.....	4-38
4.3.16	Socioeconomics.....	4-38
4.3.17	Topography, Geology, Soils, and Mineral Resources.....	4-38
4.3.18	Transboundary Impacts.....	4-38
4.3.19	Transportation.....	4-39
5.0	SUMMARY COMPARISON OF ALTERNATIVES.....	5-1
5.1	Comparative Description of Alternatives and Effects.....	5-1
5.2	Comparison of the No Action Alternative and Action Alternatives.....	5-3
5.3	Environmentally Preferred Alternative.....	5-5
6.0	OTHER SECTIONS REQUIRED BY NEPA AND/OR CEQA.....	6-1
6.1	Growth-Inducing Impacts.....	6-1
6.2	Relationship Between Short-Term Uses and Long-Term Productivity.....	6-2
6.3	Irreversible and Irretrievable Commitments of Resources.....	6-3
6.4	Unavoidable Adverse Impacts.....	6-3

7.0	COMPLIANCE, CONSULTATION, AND COORDINATION	7-1
7.1	Regulatory Compliance.....	7-1
7.1.1	Federal Laws, Regulations, and Executive Orders.....	7-1
7.1.2	State of Arizona Laws and Regulations	7-9
7.1.3	State of California Laws and Regulations.....	7-10
7.1.4	State of Nevada Laws and Regulations	7-12
7.1.5	Tribal Laws and Regulations.....	7-12
7.2	Consultation and Coordination	7-13
7.2.1	Public Involvement.....	7-13
7.2.2	Federal, State, and Local Agency Consultation and Coordination.....	7-14
7.2.3	Tribal Consultation and Coordination.....	7-15
8.0	REFERENCES	8-1
9.0	PERSONS AND AGENCIES CONTACTED	9-1
10.0	ACRONYMS & GLOSSARY OF TERMS	10-1
10.1	Acronyms	10-1
10.2	Glossary of Terms	10-9
11.0	LIST OF PREPARERS	11-1
12.0	INDEX.....	12-1

OTHER VOLUMES:

- II Lower Colorado River Multi-Species Conservation Program
Final Habitat Conservation Plan
- III Lower Colorado River Multi-Species Conservation Program
Final Biological Assessment
- IV Lower Colorado River Multi-Species Conservation Program, Volume IV:
Final Appendices to Volumes I-III and V
- V Responses to Comments on Lower Colorado River Multi-Species Conservation Program
Volumes I-IV

LIST OF TABLES

ES-1 Summary of Impacts and Mitigation Measures..... ES-16

2.1-1 Proposed Covered and Evaluation Species and Their Status
Under the Conservation Plan 2-4

2.1-2 Comparison of Species-Specific Habitat Impacts to Created
LCR MSCP Habitat (in Acres) 2-7

2.1-3 Summary of Impacts on Covered and Evaluation Species and
Estimated Level of Take Associated with Implementation of Flow- and
Non-Flow-Related Covered Activities and the Conservation Plan 2-9

2.1-4 Land Ownership in the Planning Area 2-39

2.1-5 Extent of Covered Species Habitat That Would Be Provided with
the Establishment of Land Cover Types 2-57

2.1-6 Summary of Initially Identified Conservation Areas..... 2-68

2.1-7 Agricultural Land by River Reach and Landowner Category..... 2-71

2.1-8a Anticipated Schedule for Establishment of Cottonwood/Willow..... 2-93

2.1-8b Anticipated Schedule for Establishment of Honey Mesquite 2-94

2.1-8c Anticipated Schedule for Establishment of Marsh..... 2-94

2.1-8d Anticipated Schedule for Establishment of Backwaters 2-94

2.1-9 Key Elements of Habitat Establishment and Maintenance Concepts..... 2-100

2.1-10 Land Ownership in the Off-Site Conservation Areas (Acres) 2-111

2.1-11 Species for which Habitat Establishment or Maintenance Could Occur
in Each of the Off-Site Conservation Areas 112

3.2-1 General Definitions of Categories Used in Important Farmland Maps 3.2-2

3.2-2 Agricultural Land by River Reach (2003) 3.2-3

3.2-3 Known Important Farmland within the Planning Area (acres) 3.2-3

3.2-4 Agricultural Land Conversion Between 1993 and 2003 in the Planning Area 3.2-4

3.2-5 Agricultural Land in the Off-Site Conservation Areas 3.2-8

3.4-1 Land Cover Type Classification 3.4-2

3.4-2 Amount (Acres) of Each Land Cover Type By Reach..... 3.4-3

3.4-3 Covered and Evaluation Species for the Conservation Plan 3.4-8

3.4-4 Other Sensitive Species that Could Be Present in the Planning Area..... 3.4-11

3.4-5 Sensitive Species that Could Be Present in the Off-Site Conservation Areas 3.4-19

3.5-1 Concordance Between Potential Conservation Areas within the
LCR MSCP Planning Area and Off-Site Areas..... 3.5-6

3.5-2 Summary of Previously Recorded Sites and GLO Resources Within the
Potential Conservation Areas within the Planning Area and Off-Site Areas..... 3.5-9

3.5-3 Historic Properties Listed on the NRHP that Fall Within or
Immediately Adjacent to the Planning Area..... 3.5-11

3.7-1 Total Population, Minority Population and Population Living Below
Poverty in the Affected Counties, 2000..... 3.7-2

3.7-2 Total Population, Minority Population and Population Living Below
the Poverty Level in the LCR Planning Area and Off-Site Locations, 2000..... 3.7-2

3.9-1 Impaired Water Bodies in the Project Area 3.9-12

3.12-1 Typical Sound Levels Measured in the Environment and Industry 3.12-2

3.12-2 Construction Noise Regulations 3.12-3

3.12-3 Long-Term Noise Compatibility Thresholds 3.12-4

3.12-4	Maximum Noise Levels (Ldn) with No Noise Reduction Measures in Place	3.12-8
3.16-1	Agricultural Data by County (1997)	3.16-2
3.16-2	Employment by Industry (number of jobs).....	3.16-3
3.16-3	Farm Income and Expenses (thousands of dollars)	3.16-7
3.16-4	Impacts, by Size of Agricultural Conversion, to Employment and the Value of Agricultural Sales.....	3.16-10
5.1-1	Comparison of Impacts of Project Alternatives	5-7
5.2-1	Comparison of Project Alternatives to No Action.....	5-13
6.4-1	Summary of Impacts and Mitigation Measures.....	6-4

LIST OF FIGURES

1.1-1	LCR MSCP Planning Area and River Reaches.....	1-3
2.1-1	LCR Planning Area, Reach 1.....	2-41
2.1-2	LCR Planning Area, Reach 2.....	2-43
2.1-3	LCR Planning Area, Reach 3.....	2-45
2.1-4	LCR Planning Area, Reach 4.....	2-47
2.1-5	LCR Planning Area, Reach 5.....	2-49
2.1-6	LCR Planning Area, Reach 6.....	2-51
2.1-7	LCR Planning Area, Reach 7.....	2-53
2.1-8	Hypothetical Distribution of Established Cottonwood-Willow Creation that Would Meet Habitat Requirements for All Covered Species Associated with Cottonwood-Willow	2-60
2.1-9	Proportion of Created Cottonwood-Willow and Marsh that Will Provide Habitat for Selected Covered Species	2-61
2.1-10	LCR MSCP Initially Identified Conservation Areas.....	2-69
2.1-11	Adaptive Management Process.....	2-98
2.1-12	Muddy and Virgin Rivers Off-Site Conservation Area	2-105
2.1-13	Bill Williams River Off-Site Conservation Area	2-107
2.1-14	Lower Gila River Off-Site Conservation Area	2-109
2.2-1	Average Monthly Colorado River Flows below Hoover Dam from January 1906 to January 1935.....	2-116
3.9-1	Natural Flows at Lees Ferry.....	3.9-2
3.9-2	Upper and Lower Basins of the Colorado River.....	3.9-3
3.18-1	Colorado River Location within Mexico.....	3.18-2
3.18-2	Monthly Average Colorado River Flows at the NIB and SIB	3.18-3

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EXECUTIVE SUMMARY

INTRODUCTION

This Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the impacts of implementing the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) Conservation Plan (Conservation Plan) and issuing a section 10(a)(1)(B) (incidental take) permit based on this plan. The habitat-based Conservation Plan is intended to avoid, minimize, and fully mitigate the incidental take of the covered species from the implementation of the covered activities to the maximum extent practicable. The Conservation Plan also is intended to contribute to the recovery of species listed as threatened or endangered under the Endangered Species Act of 1973, as amended (ESA) (16 United States Code [U.S.C.] 1531-1544), and reduce the likelihood for future listing of unlisted covered species along the LCR. The EIS/EIR has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500-1508); the U.S. Bureau of Reclamation's (Reclamation) Draft National Environmental Policy Handbook (U.S. Bureau of Reclamation [USBR] 2000a); the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code [P.R.C.] 21000 et seq.); and the State CEQA Guidelines, as amended (California Code of Regulations [C.C.R.], Title 14, Division 6, 15000 et seq.). Reclamation and the U.S. Fish and Wildlife Service (Service) are the lead agencies for compliance with NEPA, and The Metropolitan Water District of Southern California (Metropolitan) is the lead agency for compliance with CEQA. Together, these agencies have the responsibility for the scope, content, and legal adequacy of the document. Because the terminology and specific needs of NEPA and CEQA do not entirely overlap, explanatory text is provided where needed in the document to account for these differences. For example, CEQA uses the term "proposed project" to refer to the subject of the document, whereas NEPA uses the term "proposed action." In this EIS/EIR, the term used is "proposed action."

This joint EIS/EIR is a programmatic document intended to identify to agency decision makers and the public the potential range of impacts associated with the implementation of the proposed action, including significant and beneficial environmental effects. Additionally, the EIS/EIR will serve as the basis for future project-specific NEPA and CEQA compliance documents that will be required once individual conservation projects under the LCR MSCP are more fully defined. The proposed action does not revisit the authorization of any ongoing covered activity. Future covered activities for which incidental take authorization is being sought under the LCR MSCP may require project-specific NEPA/CEQA compliance prior to implementation.

PURPOSE AND NEED

Need for the Proposed Action

The ESA directs Federal agencies to support the conservation of listed species and ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Additionally, no taking of listed species by non-Federal agencies is allowed without a permit

1 from the Service. Federal and non-Federal actions related to the ongoing and future operations
2 of the LCR water delivery and power systems may be affecting listed species, critical habitat,
3 and may contribute to future listing of additional species. To address the needs of the species
4 and the need to comply with the ESA, this Conservation Plan is proposed with the purpose of
5 avoiding jeopardy, supporting the conservation of listed species, and reducing any contribution
6 ongoing or future operations may make to new listings. Additionally, the Service will use this
7 analysis to support its decision concerning an incidental take permit for covered non-Federal
8 activities.

9 As noted, the Federal participants in the LCR MSCP (Reclamation, the U.S. National Park
10 Service [NPS], U.S. Bureau of Indian Affairs [BIA], U.S. Bureau of Land Management [BLM], the
11 Service, and the Western Area Power Administration [Western]), acting within the scope of
12 their legal authority and obligations, currently undertake or may undertake activities along the
13 LCR that have the potential to affect and result in the incidental take of species that are listed
14 under the ESA, or that may be listed in the future. Ongoing and future Federal actions that are
15 covered by the proposed Conservation Plan are outlined in section 1.2.2.1 of this EIS/EIR and
16 more fully described in Chapter 2 of the *Lower Colorado River Multi-Species Conservation Program*
17 *Biological Assessment* (LCR MSCP BA)¹, which comprises Volume III. Federal agencies are
18 required under section 7(a)(2) of the ESA to ensure that their actions are not likely to jeopardize
19 the continued existence of a listed species or to destroy or adversely modify designated critical
20 habitat. Under section 9 of the ESA, Federal agencies also may not “take” listed species without
21 authorization provided by the Service in the incidental take statement contained in its Biological
22 Opinion (BO) issued pursuant to section 7(b).

23 The actions that the non-Federal participants in the LCR MSCP are engaged in or may become
24 engaged in along the LCR that have the potential to affect and result in the incidental take of
25 species that are listed under the ESA, or that may be listed in the future, are outlined in section
26 1.2.2.2 of this EIS/EIR and more fully described in Chapter 2 of the LCR MSCP Habitat
27 Conservation Plan (HCP) (Volume II). Under section 9 of the ESA, non-Federal entities may not
28 “take” listed species without authorization. In order to comply with section 9, the non-Federal
29 participants are requesting such authorization based on the implementation of the proposed
30 Conservation Plan.

31 The Conservation Plan, as outlined in the LCR MSCP HCP, documents the extent of the
32 incidental take for which authorization is being requested under ESA sections 7 and 10(a)(1)(B),
33 and includes measures to avoid, minimize, and mitigate the effect of that level of take to the
34 maximum extent practicable. The Conservation Plan covers both Federal and non-Federal
35 actions over a 50-year period. The Federal participants will submit the Conservation Plan as
36 part of their proposed action for consideration under section 7 consultation. The non-Federal
37 participants will submit the Conservation Plan with their application for a section 10(a)(1)(B)
38 permit to the Service. The Service will use the Conservation Plan as part of its determinations
39 under sections 7 and 10 on issuing an incidental take statement and incidental take permit.

1 To facilitate compliance with section 7(a)(2), Federal agencies may prepare a BA, pursuant to section 7(c)(1) that identifies the likely effects of the Federal action on threatened and endangered species.

1 The implementation of the Conservation Plan would provide the mechanism to meet the needs
2 of the Service, the Federal participants, and the non-Federal participants for incidental take
3 authorization under the ESA for ongoing and future actions on the LCR.

4 **Purpose of the EIS/EIR**

5 The purpose of the EIS/EIR is to analyze the environmental effects of implementing the LCR
6 MSCP Conservation Plan by both the Federal and non-Federal participants for a 50-year period,
7 as well as analyze the impacts of the incidental take from the covered activities that would be
8 authorized by the section 10(a)(1)(B) permit. There is no parallel requirement to evaluate the
9 environmental effects of authorizing incidental take through an incidental take statement under
10 section 7, although the analysis of incidental take of covered species in this EIS/EIR includes the
11 effects caused by both the Federal and non-Federal actions.

12 This EIS/EIR and the accompanying BA and HCP contain descriptions of the ongoing and
13 future activities for which incidental take coverage is sought under the ESA by the Federal and
14 non-Federal participants. Except for the effect of the authorized incidental take of covered
15 species, which is part of the proposed action, this EIS/EIR does not evaluate the environmental
16 effects of the covered activities and does not revisit NEPA or CEQA authorizations for ongoing
17 activities or provide NEPA or CEQA authorization for future activities. Implementation of the
18 Conservation Plan would not be contingent on actually undertaking any of the future covered
19 activities, but would proceed pursuant to the schedule outlined in the proposed Conservation
20 Plan as provided in Tables 2.1-8a-d (included in section 2.1.1.6 as part of the description of the
21 proposed action).

22 **Scope of the EIS/EIR**

23 This EIS/EIR evaluates only the impacts of implementing the Conservation Plan and issuance
24 of a section 10(a)(1)(B) permit by the Service based on this plan since these are the two
25 components of the proposed action. The ongoing covered activities have obtained NEPA
26 and/or CEQA authorizations to the extent required by laws in effect at the time they were
27 approved, and future covered activities will be required to obtain the appropriate
28 authorizations. Although specific regions of influence have been developed for individual
29 resources (e.g., socioeconomic and air quality impacts could affect a larger area than noise
30 impacts or impacts to cultural resources, which are site-specific and highly localized), impacts
31 generally would occur in the vicinity of the historic floodplain of the LCR or its tributaries, in
32 proximity to the sites that would be used for conservation area establishment. Implementation
33 of the Conservation Plan and issuance of the section 10(a)(1)(B) permit would not change the
34 amount of water available to the LCR MSCP participants, the amount of water used by these
35 participants, or otherwise result in changes to environmental conditions beyond those analyzed
36 in Chapter 3 of this EIS/EIR.

37 The Conservation Plan includes measures that would contribute to maintaining existing
38 desirable habitat within the planning area. The LCR MSCP participants would establish a fund
39 early in the term of the program to be expended on assessing and implementing projects for
40 maintaining existing native habitat that could occur anywhere within the planning area. The
41 types of activities that could be conducted include construction of infrastructure for water
42 delivery or movement; maintenance of marsh vegetation by burning, water delivery, dredging,

1 and other means; maintenance of moist soil conditions in riparian land cover types (e.g.,
2 cottonwood-willow); dredging activities to establish backwaters or backwater connection with
3 the main river channel; removal or control of undesirable vegetation such as saltcedar and
4 *Arundo*; and other appropriate means to maintain existing desirable habitat. Specific projects
5 and locations have not been identified (some of the projects are ongoing while others are only
6 proposed), but these maintenance activities would involve actions that are similar to the
7 proposed action and it is reasonable to assume that they would result in impacts that are similar
8 to those described in Chapter 3 of this EIS/EIR. Analyzing the environmental impacts of these
9 measures is beyond the scope of this EIS/EIR, and their implementation would not be
10 authorized by decisions based on this report.

11 **Goals and Objectives for the LCR MSCP Conservation Plan**

12 In developing the LCR MSCP Conservation Plan, the participants identified a set of goals and
13 objectives that they expect to achieve through its implementation. The goals and objectives are
14 as follows:

- 15 1. Conserve habitat that may be impacted by the covered activities that the LCR MSCP
16 participants would implement or perform on the LCR;
- 17 2. Reduce the likelihood of additional species listings on the LCR under the ESA;
- 18 3. Contribute to recovery of listed species on the LCR;
- 19 4. Accommodate current water diversions and power production on the LCR;
- 20 5. Optimize opportunities for future water and power development on the LCR;
- 21 6. Provide the basis for take authorizations for Federal and non-Federal covered
22 activities on the LCR pursuant to the ESA;
- 23 7. Provide the basis for assurances for the non-Federal parties pursuant to the ESA
24 against requirements for increased conservation and mitigation measures in the event
25 of changed circumstances or unforeseen circumstances to the maximum extent
26 permitted by law;
- 27 8. Comply with the Law of the River;
- 28 9. Identify and implement feasible conservation and mitigation measures for the
29 program based on specific economic, social, legal, and technical considerations,
30 including:
 - 31 a. Whether an alternative's costs would be prohibitively or substantially greater than
32 other alternatives.
 - 33 b. Whether the alternative is technically feasible based on current science or
34 technology, proximity to existing populations of the species, the presence or absence
35 of infrastructure necessary to implement the measures, and the ability to integrate
36 established native land cover types with existing native land cover types.

37 The Conservation Plan must also meet the criteria for issuance of a section 10(a)(1)(B) permit by
38 the Service:

- 1 1. The taking will be incidental to an otherwise lawful activity;
- 2 2. The applicant will, to the maximum extent practicable, minimize and mitigate the
- 3 impacts of such taking;
- 4 3. The applicant will develop an HCP and ensure that adequate funding for the HCP will
- 5 be provided;
- 6 4. The taking will not appreciably reduce the likelihood of the survival and recovery of the
- 7 species in the wild; and
- 8 5. The applicant agrees to implement other measures the Service may require as being
- 9 necessary or appropriate for the purpose of the HCP.

10 **ALTERNATIVES**

11 A number of project alternatives were considered but eliminated from detailed analysis. The
12 action alternatives that were carried forward are considered feasible and meet most or all of the
13 goals and objectives outlined above.

14 **Alternative 1: Implementation of the Proposed Conservation Plan and Issuance of Section** 15 **10(a)(1)(B) Permit (Conservation Plan)**

16 Alternative 1 is the proposed action and includes two primary components:

- 17 1) Implementation of a regional Conservation Plan by Federal and non-Federal
- 18 participants that would meet the LCR MSCP goals and objectives.
- 19 2) Issuance of an ESA section 10(a)(1)(B) permit by the Service based on the proposed HCP
- 20 for non-Federal covered activities.

21 Species proposed for coverage are those that meet one of the following selection criteria:

- 22 • Species that are listed or that are proposed or candidates for listing under the ESA or
- 23 species that are protected under Arizona, California, or Nevada law that could be
- 24 affected by covered activities and would require take authorization; or
- 25 • Species that could become listed during the term of the LCR MSCP Conservation Plan
- 26 under the ESA or species that could become protected under Arizona, California, or
- 27 Nevada law that could be affected by covered activities and could require future take
- 28 authorization.

29 The Conservation Plan includes a full range of conservation measures for all covered species.
30 Based on application of the selection criteria, 27 of the species considered are proposed for
31 coverage under the ESA section 10(a)(1)(B) permit. The LCR MSCP HCP also includes four
32 "evaluation species." Evaluation species are species that could become listed in future years
33 and that could be added to the covered species list during the term of the LCR MSCP, but for
34 which sufficient information is not available at this time to determine their status in the
35 planning area, the potential effects of covered activities, or to develop specific conservation
36 measures for the species. The Conservation Plan includes research studies and pilot
37 management studies for the evaluation species to determine their status in the planning area

1 and to determine appropriate conservation measures. None of the four evaluation species are
2 presently protected under the ESA.

3 The Conservation Plan includes the following types of conservation measures that, in
4 combination, would achieve program objectives for regulatory compliance and contribute to
5 species' recovery:

- 6 • Establishment of a \$25 million fund to support projects implemented by land use
7 managers in the planning area that maintain existing habitat for listed species that
8 would be covered by the Conservation Plan under this alternative;
- 9 • Creation of native land cover types (5,940 acres of cottonwood-willow, 1,320 acres of
10 honey mesquite type III, 512 acres of marsh, and 360 acres of backwaters) to provide
11 covered species habitats;
- 12 • Avoidance and minimization of impacts on covered species and their habitat resulting
13 from covered activities and Conservation Plan implementation;
- 14 • Population enhancement measures that directly or indirectly increase abundance of
15 covered species;
- 16 • Monitoring and research necessary to assess and improve conservation measure
17 effectiveness and adaptively manage implementation of the Conservation Plan over
18 time; and
- 19 • Other conservation measures relating to the covered species and the strategies for
20 implementing them.

21 The Conservation Plan is designed to fully mitigate adverse effects on all covered species
22 resulting from covered activities and to meet the ESA section 10 standard to minimize and
23 mitigate the impacts of the covered activities on covered species to the maximum extent
24 practicable [50 C.F.R. 17.22(b)(2)(B)].

25 This alternative would be implemented in the planning area, which is the historic floodplain of
26 the LCR, from Lake Mead to the SIB between the United States and Mexico and areas with
27 elevations up to and including the full pool elevations of Lake Mead, Lake Mohave, and Lake
28 Havasu.

29 **Alternative 2: No-Action Alternative**

30 The no action alternative describes a reasonable assumption of the expected future situation
31 that would result if the Conservation Plan were not implemented as proposed and the section
32 10(a)(1)(B) permit were not issued. This alternative is based on the following assumptions
33 regarding the actions that would be taken in the absence of the LCR MSCP.

34 *Assumptions*

- 35 • A comprehensive, regional multi-species conservation plan would not be implemented
36 by non-Federal and Federal entities.

-
- 1 • The Service would not issue a comprehensive section 10(a)(1)(B) permit to the states of
2 Arizona, California, and Nevada for incidental take resulting from the covered activities.
- 3 • The covered activities described in the LCR MSCP BA and LCR MSCP HCP would
4 likely be implemented, but regulatory compliance would be required and applied on a
5 case-by-case basis as each activity is considered and approved. The types of
6 conservation measures and strategies described for the proposed Conservation Plan
7 would likely be adopted to offset the impacts of each of the activities, but would be
8 planned and implemented independently for each activity. Conservation could occur in
9 the planning area as well as in the off-site conservation areas described below under
10 Alternative 4. These include the lower reaches of the Virgin and Muddy rivers, Bill
11 Williams River, and Gila River. In the absence of a comprehensive, coordinated
12 conservation program, the following would be expected:
- 13 – It is unlikely that funding would be provided to maintain existing habitat that is not
14 impacted by the individual projects.
- 15 – The individual project mitigation programs likely would not provide the regional
16 wildfire suppression and law enforcement funding proposed in the Conservation
17 Plan.
- 18 – Coordinated monitoring and adaptive management programs would not be
19 implemented.
- 20 – Since each individual project would establish its own mitigation sites, it is likely that
21 more maintenance and storage facilities would be required.
- 22 – More, smaller mitigation sites would be established, requiring more infrastructure
23 (access roads and irrigation pipelines/canals and pump facilities).
- 24 – To the extent that the agencies undertaking the covered activities proceed with ESA
25 compliance, there may be a reduced number of covered species because unlisted
26 species likely would not be included. This would result in a reduction in the amount
27 of conservation area required.

28 ***Federal Regulatory Compliance Actions***

- 29 • All Reasonable Prudent Measures (RPMs) and Reasonable Prudent Alternatives (RPAs)
30 for the 1997 and 2002 BOs must be completed by April 30, 2005, when the current BO
31 expires. Reclamation would need to reinitiate consultation with the Service on LCR
32 operations and maintenance activities, and the Service would issue a new BO, which
33 may contain conservation measures or requirements not in the original 1997 BO or the
34 2002 extension. It is likely that Reclamation's consultation with the Service regarding
35 ongoing operations and maintenance activities would incorporate the future actions for
36 which coverage is provided by the proposed Conservation Plan.
- 37 • The provisions of the 2001 BO regarding the change in point of diversion of up to 400
38 kaf from Imperial Dam to Lake Havasu would remain in effect, assuming that the
39 exchange is accomplished, until the time limits set in the BO expire.

- 1 • Future Federal actions would be required to comply with NEPA, the ESA, and other
2 laws and regulations; compliance and permit requirements would be implemented on a
3 case-by-case basis.
- 4 • It is likely that conservation measures similar to those of the proposed action would be
5 implemented to comply with regulatory requirements, with the exceptions described
6 above under “Assumptions.”

7 *Non-Federal Regulatory Compliance Actions*

- 8 • Ongoing and future actions in Arizona, California, and Nevada would be required to
9 comply with permit requirements, where appropriate, and all applicable laws and
10 regulations. There is a reasonable possibility that potential non-Federal permittees
11 would conclude that they do not require a section 10(a)(1)(B) permit for their activities,
12 either because they choose not to implement those activities or they determine that their
13 activities do not cause incidental take of protected species.

14 *Ongoing Conservation Actions*

- 15 • Conservation actions by Federal agencies that are tied to section 7 consultations under
16 section 7(a)(2) would continue to be implemented as part of that proposed action or
17 under the requirements of the BO. Implementation would cease only under the terms of
18 the BO.
- 19 • Voluntary conservation actions initiated by Federal agencies under section 7(a)(1) would
20 continue to be implemented at the discretion of the Federal agency.
- 21 • Voluntary conservation actions initiated by state agencies, tribes, or private groups
22 would continue to be implemented at the discretion of the funding entity.
- 23 • Implementation of existing recovery plans for listed species would continue as Federal
24 and non-Federal partners provide funding for specific projects relevant to the planning
25 area.

26 **Alternative 3: Implementation of a Conservation Plan Addressing ESA-Listed Species Only** 27 **and Issuance of a Section 10(a)(1)(B) Permit (ESA-Listed Species Only)**

28 This alternative would provide coverage only for those species listed under the ESA, and it
29 would result in the issuance of a section 10(a)(1)(B) permit by the Service. Covered species
30 would be the Yuma clapper rail, southwestern willow flycatcher, desert tortoise, bonytail,
31 humpback chub, and razorback sucker. The amount of take authorized would be as shown on
32 Tables 2.1-2 and 2.1-3 for these species. This alternative would differ from the proposed action
33 primarily in that no honey mesquite and less cottonwood-willow and marsh land cover would
34 need to be established. Additionally, no take permit would be issued for unlisted species, and
35 specific benefits for those species would not occur. Under this alternative, the Conservation
36 Plan would be implemented in the same geographic area as the proposed action and would
37 include the following:

- 1 • Establishment of a \$25 million fund to support projects implemented by land use
2 managers in the planning area that maintain existing habitat for listed species that
3 would be covered by the Conservation Plan under this alternative;
- 4 • Creation of native habitat in the planning area (4,050 acres of cottonwood-willow, 382
5 acres of marsh, and 360 acres of backwaters);
- 6 • Long-term management of established habitat to maintain and preserve ecological
7 functions;
- 8 • Avoidance and minimization of impacts resulting from covered activities and
9 Conservation Plan implementation on listed species and their habitat;
- 10 • Population enhancement measures intended to directly or indirectly increase abundance
11 of listed species; and
- 12 • Adaptive management measures, including monitoring and research necessary to assess
13 and improve conservation measure effectiveness.
- 14 • Other conservation measures relating to the listed species and the strategies for
15 implementing them.

16 **Alternative 4: Off-Site Conservation and Issuance of a Section 10(a)(1)(B) Permit (Off-Site**
17 **Conservation)**

18 The off-site conservation alternative would involve the application for and issuance of a section
19 10(a)(1)(B) permit for the same covered activities and covered species as the proposed action.
20 The level of impacts to covered species, including the amount of authorized take that is
21 requested, is the same for this alternative as for the proposed action, and therefore, the same
22 level of conservation measures would be proposed to mitigate the impacts, including:

- 23 • Establishment of a \$25 million fund to support projects implemented by land use
24 managers in the planning area that maintain existing covered species habitat;
- 25 • Creation of native habitat (5,940 acres of cottonwood-willow, 1,320 acres of honey
26 mesquite type III, 512 acres of marsh, and 360 acres of backwaters);
- 27 • Long-term management of created habitat to maintain and preserve ecological
28 functions;
- 29 • Avoidance and minimization of impacts resulting from covered activities and
30 Conservation Plan implementation on covered species and their habitat;
- 31 • Population enhancement measures intended to directly or indirectly increase abundance
32 of covered species;
- 33 • Adaptive management measures, including monitoring and research necessary to assess
34 and improve conservation measure effectiveness; and
- 35 • Other conservation measures relating to the covered species and the strategies for
36 implementing them.

37 The only difference between this alternative and the proposed action is that habitat generally
38 would be created along tributaries to the LCR. Fish conservation, including the creation of 360

1 acres of backwaters and fish augmentation strategies, would continue to take place in the
2 mainstem, reservoirs, and backwaters of the LCR. For purposes of analysis, it is assumed that
3 created habitat would be equally distributed between the three off-site conservation areas.

4 Potential off-site locations for implementing the Conservation Plan elements are (1) the lower
5 reaches of the Muddy River/Moapa Valley and Virgin River, proceeding upstream from the
6 confluences with Lake Mead and overlapping the NDOW's Overton Wildlife Management
7 Area; (2) the lower reach of the Bill Williams River, proceeding upstream from the confluence
8 with the LCR and overlapping the Bill Williams NWR, to Alamo Dam; and/or (3) lower Gila
9 River Valley, proceeding upstream from the LCR planning area and extending approximately
10 ten miles east of Mohawk Valley.

11 **SCOPING AND PUBLIC INVOLVEMENT**

12 Public scoping was conducted to help identify areas of concern and specific issues that should
13 be addressed in the EIS/EIR. Notices that a combined EIS/EIR was being prepared were
14 published in 1999 and 2000. Subsequent notices were made in October 2003. The first Notice of
15 Intent (NOI)/Notice of Preparation (NOP) was published in the *Federal Register* (Volume 64,
16 Number 95, pages 27000-27002) on May 18, 1999. A supplemental NOI/NOP was published in
17 the *Federal Register* (Volume 65, Number 134, pages 43031-43034) on July 12, 2000. These two
18 NOI/NOPs are included in Appendix B. A Revised NOP of a Draft EIR was issued by
19 Metropolitan on July 25, 2000 and also is included in Appendix B, as is the NOP issued on
20 October 17, 2003. Three public scoping meetings held in 2000 were supplemental to the original
21 scoping meetings in 1999 and involved a formal presentation on planning progress and
22 conceptual preliminary alternatives. Four additional public information meetings were held in
23 November 2003 in Arizona, California, and Nevada to present information regarding the
24 alternatives being evaluated in this EIS/EIR and to obtain public comments regarding issues to
25 be addressed in this document. Scoping summary reports documenting the issues raised at
26 these meetings are included in Appendix C.

27 Approximately 360 copies of the Draft EIS/EIR were distributed to agencies, public libraries,
28 Indian tribes, organizations, and individuals for review during a 60-day period ending on
29 August 18, 2004. Additionally, three public hearings were held in Henderson, Nevada; Blythe,
30 California; and Phoenix, Arizona on July 20-22, 2004 in order to receive public comments on the
31 Draft EIS/EIR. Additional information regarding the public involvement program is included
32 in section 7.2.1.

33 **SUMMARY OF IMPACTS**

34 **Comparative Description of Alternatives and Effects**

35 The proposed action (Alternative 1) has the potential to cause impacts to environmental
36 resources, as described in Chapter 3. Many of these potential impacts would be caused by
37 construction activities, such as grading required to establish the proper topography for growing
38 riparian vegetation to provide habitat for covered species or to develop backwaters and marsh
39 land cover. Once the habitat has been established, ongoing maintenance activities would not
40 significantly impact most resources. Potential construction-related temporary and less than
41 significant impacts have been identified for aesthetics, biological resources, hazards and

1 hazardous materials, hydrology, geology, and transportation. Construction also could result in
2 significant impacts to agricultural resources, air quality, biological resources (associated with
3 backwater creation), cultural resources, and noise. Additionally, construction would result in
4 temporary environmental justice impacts (associated with air quality and noise) and
5 transboundary impacts (associated with air quality). It also could result in long-term changes to
6 Indian Trust Assets (ITAs). Mitigation measures have been identified that would reduce most
7 of the potential significant impacts to a less than significant level. (Impacts to aesthetics,
8 hazards and hazardous materials, hydrology, ITAs, geology, transboundary impacts, and
9 transportation do not require mitigation, nor do some impacts to air quality and biological
10 resources.) Depending on the characteristics of specific conservation sites and construction
11 methods implemented, there may be significant temporary impacts to air quality and associated
12 impacts to environmental justice that cannot be avoided.

13 Potential impacts that may result from the maintenance and monitoring of the conservation
14 sites after construction is completed and from implementing other conservation measures are
15 either less than significant or can be mitigated to be less than significant, with the exception of
16 air quality impacts from the largest prescribed burns and associated environmental justice
17 impacts.

18 No significant long-term operational impacts have been identified for the proposed action with
19 the exception of potential noise impacts from pump operation and associated environmental
20 justice impacts. The potential long-term effects to agricultural resources, land use,
21 environmental justice, and socioeconomics would be less than significant. Furthermore, the
22 proposed action would result in long-term beneficial impacts on biological resources, aesthetics,
23 and water quality.

24 The no action alternative (Alternative 2) is assumed to include many of the same conservation
25 measures as the proposed action. These measures would be implemented on a case-by-case
26 basis as required to mitigate the effects of covered actions that are undertaken by the various
27 agencies. Although the construction, maintenance, and operation of these individual
28 conservation projects have the potential to cause impacts that are similar to those of the
29 proposed action, there would be differences in the scope of those impacts. In the absence of a
30 coordinated conservation program, the individual conservation projects are likely to be smaller
31 and more widely scattered. It also is likely that conservation would focus only on listed species,
32 thus reducing the total amount of conservation area that would be created.

33 These factors may reduce the effects on agricultural resources, land use, environmental justice
34 (loss of agricultural jobs), and socioeconomics below those caused by the proposed action.
35 However, there would likely be similar levels of impacts to aesthetics, air quality, cultural
36 resources, and transportation. The potential for significant air quality and associated
37 environmental justice impacts would still exist, even with adoption of mitigation measures,
38 depending on the location and size of the conservation projects. Although less than significant,
39 impacts would likely be greater than those caused by the proposed action for hazards and
40 hazardous materials and noise because of the increased number of individual projects involved
41 and the greater likelihood that the conservation sites would be located closer to developed areas
42 near existing facilities used in implementing the covered actions. The no action alternative
43 could include conservation in the off-site conservation areas. To the extent that this occurred,

1 short-term impacts on environmental justice associated with air quality and noise, ITAs, and
2 transboundary impacts would be reduced because these impacts would not occur in the off-site
3 areas.

4 More importantly, the no action alternative would provide fewer benefits to biological
5 resources, along with reduced benefits to aesthetics and water quality. In the absence of a
6 coordinated program with the capacity to develop large blocks of conservation area, the
7 multiple individual mitigation sites that would be developed under this alternative would be
8 smaller, with greater edge areas proportionate to their size, and are less likely to be located in
9 proximity to existing occupied habitat. These factors would reduce the effectiveness of the
10 mitigation sites as compared to the conservation measures in the proposed action.
11 Furthermore, the absence of a coordinated monitoring and adaptive management program for
12 the individual projects would reduce their likelihood of success in providing the benefits for the
13 biological resources that would result from the program proposed for the LCR MSCP. Impacts
14 to native fish species along the Virgin and Muddy rivers also could occur under this alternative,
15 however, which would represent a greater impact to biological resources than identified for the
16 proposed action.

17 Overall, under the no action alternative, the short-term, construction-related impacts are
18 potentially greater, while the permanent agricultural and associated environmental justice
19 impacts and biological, aesthetic, and water quality benefits are potentially less than those of the
20 proposed action.

21 The listed species only alternative (Alternative 3) would require the construction of a smaller
22 amount of conservation area, reducing the short-term, construction-related impacts from the
23 levels that would be caused by the proposed action. Unlike the no action alternative, the
24 construction of the conservation projects would still be a coordinated effort, focusing on
25 creating large size patches of integrated mosaics of vegetation. This approach would likely
26 involve fewer construction sites than would be required under the proposed action, but there
27 would still be the potential for significant unmitigable impacts to air quality and related
28 environmental justice impacts, depending on the location and size of the sites. Other
29 construction-related, short-term impacts would likely be less than those identified for the
30 proposed action. Effects on agricultural resources, land use, environmental justice (from noise
31 and loss of agricultural jobs), and socioeconomics would also likely be less since fewer acres of
32 existing agricultural land would be subject to conversion for conservation area use. As with the
33 proposed action, these effects would be less than significant. However, this alternative would
34 not provide the same level of long-term, beneficial impacts to biological and aesthetic resources
35 and water quality that are provided by the proposed action.

36 The off-site conservation alternative (Alternative 4) differs from the proposed action in the
37 location, but not the quantity, of the riparian and mesquite land cover types that would be
38 created. As a result, the scope of short-term, construction-related impacts would be similar to
39 those identified for the proposed action, although transboundary and ITA impacts would not
40 occur, and the potential for short-term environmental justice impacts associated with air quality
41 and noise and long-term impacts associated with noise would be greatly lessened. The
42 potential for significant, unmitigable impacts to air quality remains, although the California air
43 quality standards would not be applicable to this alternative since none of the conservation

1 areas would be created in California. The environmental justice impacts associated with noise
2 and air quality would not occur in the off-site conservation areas since the percentage of low-
3 income and minority populations in these locations is less than in the larger community of
4 comparison; they would be associated only with the creation of 360 acres of backwaters. Effects
5 to agricultural resources, land use, environmental justice (loss of agricultural jobs), and
6 socioeconomics would be similar to the proposed action, and less than significant. Potential
7 impacts to ITAs would be greatly lessened under this alternative because they are not present in
8 the off-site conservation areas, and impacts would occur only in the areas where the 360 acres of
9 backwaters would be created.

10 This alternative would provide the same long-term benefits to biological resources, aesthetic
11 resources, and water quality as the proposed action, but it has the potential to cause significant
12 unavoidable short- and long-term impacts to biological resources that are present at off-site
13 conservation areas (native common and sensitive fish inhabiting the Virgin and Muddy rivers)
14 that are not present in the planning area. These potential short- and long-term impacts to
15 biological resources offset the difference between this alternative and the proposed action with
16 respect to short-term air quality and associated environmental justice impacts, as well as
17 environmental impacts associated with noise since this impact would be feasibly mitigable.
18 Alternative 4 would not result in transboundary impacts, but these are impacts that would
19 occur in a different location than those of the proposed action; they are not different types of
20 impacts. Alternative 4 also would not result in impacts to ITAs (with the exception of potential
21 impacts from backwater creation), but these, too, are feasibly mitigable.

22 **Comparison of the No Action Alternative and Action Alternatives**

23 Under the no action alternative (Alternative 2), the covered activities described in the LCR
24 MSCP BA and LCR MSCP HCP would likely be implemented, but regulatory compliance
25 would be required and applied on a case-by-case basis as each action is considered and
26 approved. In the absence of a comprehensive, coordinated conservation program, the following
27 would be expected:

- 28 • It is unlikely that funding would be provided to maintain existing habitat that is not
29 impacted by the individual projects.
- 30 • The individual project mitigation programs likely would not provide the regional
31 wildfire suppression and law enforcement funding proposed in the Conservation Plan.
- 32 • Coordinated monitoring and adaptive management programs would not be
33 implemented.
- 34 • Since each individual project would establish its own mitigation sites, it is likely that
35 more maintenance and storage facilities would be required.
- 36 • More, smaller mitigation sites would be established, requiring more infrastructure
37 (access roads and irrigation pipelines/canals and pump facilities).
- 38 • To the extent that the agencies undertaking the covered activities proceed with ESA
39 compliance, there may be a reduced number of covered species because unlisted species
40 likely would not be included.

1 Thus, the no action alternative would not result in a continuation of existing conditions. Its
2 impacts generally would be similar to those of the action alternatives because similar
3 conservation measures likely would be implemented, and differences in impacts typically
4 would be a matter of degree rather than kind. In general, the impacts that are directly
5 associated with the amount of conservation area established (including beneficial impacts)
6 would be comparable to those of Alternative 3 and less than those of Alternatives 1 and 4.

7 The no action alternative would result in similar types of construction-related impacts as the
8 action alternatives. In some cases, the intensity of the impact would be comparable to
9 Alternative 3 and less than under Alternatives 1 and 4 (e.g., short-term aesthetic impacts to
10 conservation area establishment sites; impacts from erosion). In other cases (e.g., air quality,
11 noise), short-term impacts would be greater because the lack of a comprehensive, coordinated
12 effort could result in more, smaller projects, and the need to develop more infrastructure and
13 support facilities. As noted above, this may reduce the effects to agricultural resources, land
14 use, environmental justice (loss of agricultural jobs) and socioeconomics below those caused by
15 the proposed action and Alternative 4 (off-site conservation).

16 Beneficial impacts to aesthetic resources and water quality would be less than under
17 Alternatives 1 and 4 because a smaller amount of conservation area would be created and
18 comparable to those of Alternative 3 because similar amounts of conservation area would be
19 created. Beneficial impacts to biological resources that are directly linked to the amount of
20 conservation area created would be less than under Alternatives 1 and 4 and comparable to
21 Alternative 3. Beneficial impacts of all action alternatives to biological resources would be
22 reduced under the no action alternative because funding would not be provided to maintain
23 existing habitat that is not impacted by the individual projects, regional wildfire suppression
24 and law enforcement funding likely would not be provided, and coordinated monitoring and
25 adaptive management programs would not be implemented.

26 Long-term noise from pump operation could be slightly greater than under the proposed action
27 and Alternative 4 because conservation measures would be more likely to be implemented
28 closer to developed areas and approximately equal to those of Alternative 3.

29 The no action alternative could include conservation in the off-site conservation areas. To the
30 extent that this occurred, short-term impacts on environmental justice associated with air
31 quality and noise, ITAs, and transboundary impacts identified for Alternatives 1 and 3 would
32 be reduced because these impacts would not occur in the off-site areas. Impacts to native fish
33 species along the Virgin and Muddy rivers could occur under this alternative, as is the case for
34 Alternative 4. This would represent a greater impact to biological resources than identified for
35 Alternatives 2 or 3.

36 **Environmentally Preferred Alternative**

37 As discussed above, each of the alternatives would have the potential to cause short-term,
38 construction-related impacts to many of the resources analyzed in this EIS/EIR. Although these
39 potential impacts may be less for Alternatives 2 (no action), and 3 (listed species only), they can
40 be mitigated to less than significant levels for all of the alternatives, except for the potential
41 impacts to air quality and associated environmental justice impacts. Some impacts would not
42 occur or would be reduced under Alternatives 2 and 4 because ITAs are not present in the off-

1 site conservation areas, and transboundary impacts and environmental justice impacts
2 associated with noise and air quality would not occur as a result of construction in these off-site
3 areas. These impacts would all be feasibly mitigable with the exception of air quality-related
4 impacts, as noted above. Depending on the location and size of conservation project sites, there
5 may be significant air quality impacts that cannot be mitigated to a less than significant level,
6 and this potential exists for each alternative, although the associated environmental justice
7 impacts would be greatly reduced under Alternative 4, and the transboundary impacts would
8 be avoided. To the extent that conservation occurred in the off-site conservation areas as part of
9 Alternative 2, these impacts would be reduced or avoided as well.

10 Similarly, each of the alternatives could cause long-term impacts through ongoing maintenance
11 of created habitat. These impacts would be less than significant for each alternative, with the
12 exception of air quality impacts from prescribed burns, which could be unavoidable for the
13 largest burns. The effects to agricultural resources, land use, environmental justice, and
14 socioeconomics would be less for Alternatives 2 and 3, although environmental justice impacts
15 associated with noise and air quality could be lessened under Alternative 2 to the extent that
16 conservation occurred in the off-site conservation areas. Alternatives 2 and 3, however, would
17 not provide the same level of long-term biological, aesthetic, or water quality benefits as the
18 proposed action or Alternative 4 (off-site conservation). These long-term benefits would offset
19 the less than significant short-term effects to other resources. Alternative 4, like Alternative 2,
20 would potentially cause greater biological impacts than the proposed action, which would
21 offset the equal benefit that it would provide to these resources. These long-term biological
22 beneficial impacts would outweigh the short-term air quality and environmental justice impacts
23 and the feasibly mitigable environmental justice impact associated with noise from pumps that
24 would be avoided under Alternative 4.

25 Overall, most of the short-term, construction-related impacts that would potentially occur
26 under each alternative can be mitigated to less than significant levels. The potentially
27 significant air quality impacts would exist for all the alternatives and do not provide a basis for
28 distinguishing between them, although short-term air quality impacts associated with
29 environmental justice would be lessened under Alternative 4, and transboundary impacts,
30 which are not considered substantial impacts, would not occur. The long-term impacts, with
31 the implementation of the mitigation measures identified in this EIS/EIR, would similarly be
32 less than significant for all the alternatives. The primary difference between the alternatives lies
33 with the level of benefit that is provided to the biological resources. Both Alternatives 1 and 4
34 provide the same level of benefit, but Alternative 4 poses the potential for short- and long-term
35 impacts to endangered fish species that inhabit the Virgin and Muddy rivers where the off-site
36 conservation projects would be sited. Therefore, Alternative 1 is the environmentally preferred
37 alternative.

38 A summary of the potential impacts and proposed mitigation measures identified for
39 Alternatives 1, 2, 3, and 4 is provided in Table ES-1.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure ³
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
AESTHETICS					
AESTH-1: Construction/maintenance activities would temporarily lessen the visual quality of the conservation area establishment sites located on or near visually sensitive resources (<i>less than significant impact</i>).	X	X	X	X	None required
AESTH-2: The construction of field facilities and fish-rearing facilities could be required, which could alter the visual quality of the selected sites (<i>less than significant impact</i>).	X	X	X	X	None required
AESTH-3: Conservation area establishment would return sites to a more natural appearance (<i>beneficial impact</i>).	X	X	X	X	None required
AGRICULTURAL RESOURCES					
AG-1: Important Farmland could be converted to a nonagricultural use (<i>less than significant impact</i>).	X	X	X	X	None required
AG-2: Waterfowl attracted to established backwaters and marshes could destroy crops grown on adjacent farmland (<i>less than significant impact</i>).	X	X	X	X	None required
AG-3: Runoff from established conservation areas could alter the slopes of adjoining laser-leveled fields (<i>significant impact</i>).	X	X	X	X	AG-1: Develop grading plans for newly established conservation areas that direct runoff away from adjacent agricultural lands to ensure that flow rates from the conservation area do not exceed existing discharge rates.
AG-4: Covered species attracted to established conservation areas could disperse to other lands within the planning area (<i>less than significant impact</i>).	X	X	X	X	None required
AIR QUALITY					
AQ-1: The use of fossil fuel-fired construction equipment during construction, maintenance, and operational activities would result in intermittent combustive emissions that would not violate any air quality standard or contribute substantially to an existing or projected air quality violation (<i>less than significant impact</i>).	X	X	X	X	None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
AIR QUALITY					
AQ-2: The development of the largest projects would produce fugitive dust emissions that could exceed an ambient 24-hour PM10 standard (<i>significant impact</i>).	X	X	X	X	AQ-1: Implement standard operating practices to minimize fugitive dust (PM10) emissions during construction activities.
AQ-3: Emissions from the largest prescribed burns during terrestrial vegetation establishment or maintenance activities would produce emissions that could contribute to an exceedance of an ambient 24-hour PM10 standard (<i>significant impact</i>).	X	X	X	X	AQ-2: Implement a smoke management plan for all construction and maintenance activities involving the use of fire.
AQ-4: Air emissions from proposed conservation area establishment activities and facility construction could exceed the MDAQMD daily NO _x or PM10 emission significance thresholds, which would result in a cumulatively considerable net increase of a nonattainment pollutant (<i>significant impact</i>).	X	X	X		See Mitigation Measure AQ-1.
AQ-5: Air emissions from the proposed conservation area establishment activities would not expose sensitive receptors to substantial pollutant concentrations (<i>less than significant impact</i>).	X	X	X	X	None required
AQ-6: Air emissions from the proposed conservation area establishment activities would not create objectionable odors that affect a substantial number of people (<i>less than significant impact</i>).	X	X	X	X	None required
BIOLOGICAL RESOURCES					
BIO-1: Issuance of the section 10(a)(1)(B) permit would authorize the incidental take of up to 27 covered species from implementation of both the covered activities and the Conservation Plan (<i>less than significant impact</i>).			X	X	None required

X

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
BIOLOGICAL RESOURCES					
BIO-2: The establishment of 7,260 acres of cottonwood-willow and honey mesquite land cover would increase the extent of cottonwood-willow riparian forest and mesquite woodland sensitive communities (<i>beneficial</i>).	X	X	X ⁴	X	None required
BIO-3: Clearing, grading, planting, and site maintenance during conversion of agricultural lands to cottonwood-willow and/or honey mesquite land cover types would result in the elimination of existing low value habitat used by resident and migratory wildlife, removal of weedy vegetation and crops, alteration of habitat characteristics through changes in local hydrology and exposure of soil to erosion, and elimination or displacement of resident wildlife (<i>less than significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	None required
BIO-4: Clearing, grading, planting, and site maintenance during conversion of undeveloped lands (primarily saltcedar) to cottonwood-willow and/or honey mesquite land cover types would result in the elimination of existing non-native vegetation and the habitat it provides for wildlife, short-term effects on habitat characteristics from alteration of local hydrology and exposure of soil to erosion, and elimination or displacement of resident wildlife (<i>less than significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	None required
BIO-5: Clearing, grading, planting, and site maintenance during establishment of marsh would result in the long-term elimination of existing vegetation and the habitat it provides for wildlife, alteration of habitat conditions through changes in local hydrology and exposure of soil to erosion, and elimination or displacement of resident wildlife (<i>less than significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
BIOLOGICAL RESOURCES					
BIO-6: Clearing, grading, and site maintenance during establishment of backwaters would result in the long-term elimination of existing vegetation and the habitat it provides for wildlife, alteration of habitat conditions through changes in local hydrology and exposure of soil to erosion, and elimination or displacement of resident wildlife (<i>less than significant or significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	BIO-1: Conduct site-specific surveys for non-covered sensitive species during selection of habitat establishment or enhancement (e.g., existing backwaters) areas and, if any are found, then implement measures appropriate for the specific site and species to avoid or minimize impacts to the extent feasible without causing impacts on covered species. These may include measures specified in the Conservation Plan to avoid or minimize potential effects on covered species (e.g., scheduling to avoid breeding times).
BIO-7: Maintenance of established habitats would result in the removal of invasive non-native vegetation, alteration of habitat characteristics through changes in local hydrology, and short-term elimination or displacement of resident wildlife (<i>less than significant short-term impacts; less than significant or beneficial long-term impacts</i>).	X	X	X	X	None required
BIO-8: Population enhancement activities for covered fish and bird species could adversely affect existing individuals or populations of covered or sensitive species (<i>less than significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	None required
BIO-9: Native land cover type establishment and maintenance could temporarily affect wetlands and waters of the U.S (<i>less than significant short-term impacts; beneficial long-term impacts</i>).	X	X	X	X	None required
BIO-10: Land cover type establishment and maintenance activities could result in periodic short-term impacts on sensitive and common native fishes inhabiting the Virgin and Muddy rivers (<i>less than significant impact</i>).	X			X	None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
BIOLOGICAL RESOURCES					
BIO-11: Construction to establish/enhance native land cover types could result in the long-term loss or degradation of sensitive native fish habitats in the Virgin and Muddy rivers (<i>significant impact</i>).	X ⁵			X	BIO-2: Design site-specific habitat establishment plans to avoid and minimize potential effects on sensitive native fish habitats along the Virgin and Muddy rivers. Preparation of the design plans shall be coordinated with and approved by the Service as part of section 7 consultation. If appropriate, design plans shall include measures to rehabilitate any affected habitat.
CULTURAL AND HISTORIC RESOURCES					
CULT-1: Disturbance of the ground surface could directly or indirectly disturb or destroy significant archaeological or historical resources, particularly in undeveloped or previously undisturbed areas (<i>significant impact</i>).	X	X	X	X	CULT-1: Consult with the appropriate SHPO(s), tribes, and other interested parties, perform archival research, interview informants, and conduct cultural resource inventories; evaluate all identified cultural resources for potential listing on the National Register of Historic Places or state or local registers; modify project design, when feasible, to avoid cultural resources eligible for listing; develop and implement a pre-construction Testing and Evaluation Plan, pre-construction Data Recovery Plan, and Cultural Resources Construction Monitoring Plan as appropriate; re-direct construction as needed if new cultural resources sites are found, document new discoveries, and avoid sites or implement a data recovery program; initiate consultation with any known lineal descendants and relevant Indian tribes as per NAGPRA or follow state and local laws as appropriate; incorporate these procedures into all archaeological testing and/or data recovery plans and the Cultural Resources Construction Monitoring Plan.

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Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
CULTURAL AND HISTORIC RESOURCES					
CULT-2: Cultural resources may be affected by unauthorized artifact collection during construction or by a lack of awareness of cultural resource mitigation measures on the part of construction personnel (<i>significant impact</i>).	X	X	X	X	See Mitigation Measure CULT-1
ENERGY AND DEPLETABLE RESOURCES					
Minor impact associated with use of diesel fuel and electrical power during construction and operations. Negligible impact to hydropower production due to consumptive use of water for conservation areas.	X	X	X	X	None required
ENVIRONMENTAL JUSTICE					
EJ-1. Significant, short-term air quality impacts from construction activities and prescribed burns in or near agricultural areas could result in disproportionate impacts to minority and low-income populations.	X ⁶	X	X	X ⁶	Implement Mitigation Measures AQ-1 and AQ-2
EJ-2. Noise from construction and pumps that exceeded local standards could disproportionately affect minority and low-income populations.	X ⁶	X	X	X ⁶	Implement Mitigation Measures NOI-1 and NOI-2
EJ-3: If agricultural land were converted to conservation areas, the loss of agricultural jobs would disproportionately affect minority and low-income populations.	X	X	X	X	EJ-1: Reclamation shall work with local jurisdictions and/or growers to ensure that agricultural workers are notified as soon as possible of the potential for a loss of jobs once specific project locations have been identified. Reclamation will encourage the local jurisdictions and/or growers to provide timely information and assistance to agricultural workers regarding the availability of alternative employment.

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
HAZARDS AND HAZARDOUS MATERIALS					
HAZ-1: The use of pesticides, lubricants, fuels, and other hazardous materials during construction, operations, and maintenance could result in localized spills, which could create a hazard to the environment (<i>less than significant impact</i>).	X	X	X	X	None required
HAZ-2: The increase in riparian and backwater areas could result in an increase in vectors (<i>less than significant impact</i>).	X	X	X	X	None required
HAZ-3: Construction activities could cause wildfires (<i>less than significant impact</i>).	X	X	X	X	None required
HAZ-4: Fire used as a construction and maintenance tool could escape control and become a wildland fire (<i>less than significant impact</i>).	X	X	X	X	None required
HAZ-5: Conservation area establishment actions implemented within an Accident Potential Zone of an airport or near a private airstrip could cause a comparatively minor increase in bird populations (<i>less than significant impact</i>).	X	X	X	X	None required
HYDROLOGY AND WATER QUALITY					
HYDRO-1: Habitat establishment activities could result in erosion-induced siltation (<i>less than significant impact</i>).	X	X	X	X	None required
HYDRO-2: Habitat establishment could have a short-term adverse effect to water quality if irrigation mobilized (released) pesticides, salts, or other contaminants (<i>less than significant impact</i>).	X	X	X	X	None required
HYDROLOGY AND WATER QUALITY					
HYDRO-3: Water quality in created or restored backwaters and marshes could be affected by increasing concentrations of various naturally occurring and man-made chemicals (both in the soil and the water column) that result from evaporation of water (<i>less than significant impact</i>).	X	X	X	X	None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
HYDRO-4: Conservation area establishment would result in a long-term improvement to water quality if agricultural land were used (<i>beneficial impact</i>).	X	X	X	X	None required
INDIAN TRUST ASSETS					
ITA-1: Implementing conservation measures on tribal land could result in changes to all classes of ITAs.	X ⁷	X	X	X ⁷	None required.
LAND USE					
No significant impacts specific to land use were identified, although significant land use conflicts were identified in the agricultural resources and noise analyses (Impacts AG-3, AG-4, NOI-1, and NOI-2).	X	X	X	X	Implement Mitigation Measures AG-1, NOI-1, and NOI-2.
NOISE					
NOI-1: Construction activities could cause a temporary, substantial increase in ambient noise levels that could exceed local standards if construction occurred in proximity to noise-sensitive receptors (<i>significant impact</i>).	X	X	X	X	NOI-1: As needed, select quieter equipment; use noise control devices on equipment, locate equipment away from sensitive receptors; notify nearby neighbors prior to work; minimize idling, use noise barriers; and where possible, limit construction to non-mating, non-nesting seasons of noise-sensitive species.
NOI-2: Pumps located near noise-sensitive receptors could cause a substantial increase in ambient noise levels or exceed regulatory thresholds (<i>significant impact</i>).	X	X	X	X	NOI-2: If pumps cannot be located at sufficient distances from sensitive receptors to avoid the exceedance of a local noise standard or a substantial increase in the ambient noise level at the sensitive receptors, construct barriers or enclosures to ensure adherence to local standards.
POPULATION AND HOUSING					
No impact on population or housing.	X	X	X	X	None required
PUBLIC SERVICES AND UTILITIES					
Minimal impacts to water treatment, storm drainage, and water supply from the potential construction and operation of two field facilities. Minor impacts to landfill capacity from construction and operations.	X	X	X	X	None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure
	2 No Action ¹	1 Proposed Action	3 Listed Species Only ²	4 Off-Site Conservation	
RECREATION					
REC-1: The implementation of certain conservation measures could result in the loss of recreational opportunities (<i>less than significant impact</i>).	X	X	X	X	None required
SOCIOECONOMICS					
SOC-1: Agricultural jobs would be lost if agricultural land were converted to conservation areas.	X	X	X	X	None required
SOC-2: Agricultural-related revenue would be lost if agricultural land were converted to conservation areas.	X	X	X	X	None required
SOC-3: Local property tax revenues could be reduced if privately owned land were leased or acquired by the Federal or state participants in the LCR MSCP.	X	X	X	X	None required
SOCIOECONOMICS					
SOC-4: Local sales tax from the purchase of products related to agricultural uses would be reduced if privately owned agricultural land was placed in public ownership.	X	X	X	X	None required
TOPOGRAPHY, GEOLOGY, SOILS, AND MINERAL RESOURCES					
GEO-1: Activities associated with conservation area establishment could result in erosion-induced siltation of the Colorado River (<i>less than significant impact</i>).	X	X	X	X	None required
TRANSBOUNDARY IMPACTS					
TRANS-1: PM ₁₀ and combusive emissions from the construction and maintenance of created conservation areas in Reach 7 could disperse to Mexico.	X ⁸	X	X		None required

Table ES-1. Summary of Impacts and Mitigation Measures (continued)

<i>Impact</i>	APPLICABLE ALTERNATIVE				<i>Mitigation Measure</i>
	<i>2 No Action¹</i>	<i>1 Proposed Action</i>	<i>3 Listed Species Only²</i>	<i>4 Off-Site Conservation</i>	
TRANSPORTATION					
Minor impact from construction traffic.	X	X	X	X	None required
1	The no action alternative would result in similar types of impacts as the proposed action since similar conservation measures likely would be implemented. It is likely, however, that a smaller amount of conservation area would be established or maintained, thus reducing the intensity or magnitude of the impacts, including beneficial impacts. Some conservation could occur in the off-site conservation areas, and impacts could occur in these areas as well as in the planning area.				
2	The listed species only alternative would result in the establishment of a smaller amount of conservation area than the proposed action. The same types of impacts would occur, but the intensity, or magnitude, would be reduced, including that of beneficial impacts.				
3	The development and implementation of mitigation measures for the no action alternative is outside the authority of the lead agencies for this EIS/EIR. The mitigation measures included in this table are examples of measures that could be implemented to reduce impacts associated with the no action alternative.				
4	Less cottonwood-willow habitat and no honey mesquite habitat would be established under this alternative.				
5	These impacts could occur under the no action alternative to the extent that conservation area creation occurred in the off-site conservation areas.				
6	Under Alternative 2, these impacts would not occur to the extent that conservation areas were created in the off-site conservation areas. Air quality and noise impacts would not disproportionately affect minority and low-income populations in the off-site conservation areas. Under Alternative 4, impacts would be associated only with the creation of 360 acres of backwaters along the LCR.				
7	Under Alternative 2, these impacts would not occur to the extent that conservation areas were created in the off-site conservation areas. Under Alternative 4, impacts would be associated only with the creation of 360 acres of backwaters along the LCR. No tribal lands or ITAS are present in any of the off-site conservation areas.				
8	Transboundary impacts would not occur if conservation occurred only in the off-site conservation areas or in Reaches 1-6.				

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