

FINAL

Environmental Impact Statement for the Reach 11 Recreation Master Plan



U.S. Bureau of Reclamation
Phoenix Area Office
Lower Colorado Region
Phoenix, Arizona

October 2002

REACH



**FINAL ENVIRONMENTAL IMPACT STATEMENT
for the
REACH 11 RECREATION MASTER PLAN**

MARICOPA COUNTY, ARIZONA

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION

The final environmental impact statement (FEIS) describes the anticipated environmental effects associated with the proposed approval of a recreation master plan for the Reach 11 Recreation Area (Reach 11), located in the northeastern portion of the City of Phoenix, Arizona. Reach 11 includes 1,500 acres adjacent to the Central Arizona Project (CAP) canal, between Cave Creek and Scottsdale roads. The land is owned by the U.S. Bureau of Reclamation (Reclamation) and is managed for recreational purposes by the City of Phoenix Parks and Recreation Department (PRD) under a 1986 land use agreement.

The intent of the Reach 11 Recreation Master Plan is to plan for optimal recreational use of Reach 11 based on the needs of the City and community, while ensuring compatibility with the primary flood control function of Reach 11. A master plan would accommodate and respect the full range of current and future recreation demands of this growing area of Phoenix, Arizona. The FEIS considers three alternative master plan scenarios. All three provide a level of development established by PRD for a district park.

Under the Proposed Action, high-demand recreation needs would be met while still providing natural and picnic areas, as well as space for other passive recreation uses. Two other action alternatives are considered: one that would provide less active recreation-oriented development and emphasizes passive recreation-oriented activities (Alternative 1), and one that would maximize development of active-recreation oriented recreation facilities (Alternative 2). The alternative ultimately selected and implemented is expected to be developed in phases by PRD, as funding becomes available.

A website (<http://www.apo.lc.usbr.gov>) is available with a read-only down-loadable copy of the FEIS.

Please direct questions to:

Ms. Sandra Eto
Bureau of Reclamation
Phoenix Area Office
P.O. Box 81169, PXAO-1500
Phoenix, AZ 85069-1169
(602) 216-3857

For a hard copy version of the FEIS, please contact:

Ms. Janice Kjesbo
Bureau of Reclamation
Phoenix Area Office
Tel: (602) 216-3864
Fax: (602) 216-4006

Statement Number:

Filing Date:

TABLE OF CONTENTS

	<u>Page</u>
LIST OF ACRONYMS AND ABBREVIATIONS.....	vi
UNIT CONVERSION GUIDE.....	viii
EXECUTIVE SUMMARY.....	ES-1
BACKGROUND.....	ES-1
PURPOSE AND NEED FOR THE PROPOSED ACTION.....	ES-1
ALTERNATIVES.....	ES-2
Alternatives Analyzed but Eliminated from Further Study	ES-3
Alternatives Studied in Detail	ES-3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	ES-6
DRAFT ENVIRONMENTAL IMPACT STATEMENT REVIEW.....	ES-9
1.0 PURPOSE AND NEED FOR THE PROJECT.....	1-1
1.1 BACKGROUND.....	1-1
1.2 PURPOSE AND NEED FOR THE ACTION	1-4
1.3 SCOPING PROCESS	1-5
1.4 ISSUES ADDRESSED IN THE EIS.....	1-5
1.4.1 Issue 1 – Purpose and Need for the Project Plan/Change in Existing Use of the Area	1-6
1.4.2 Issue 2 – Recreation Opportunities	1-6
1.4.3 Issue 3 – Project Financing	1-6
1.4.4 Issue 4 – Access and Circulation.....	1-6
1.4.5 Issue 5 – Biological Resources.....	1-6
1.4.6 Issue 6 – Water Resources	1-7
1.4.7 Issue 7 – Cultural Resources	1-7
1.4.8 Issue 8 – Adjacent Land Uses	1-7
1.5 PLANNING REQUIREMENTS AND RELATED REGULATIONS.....	1-7
2.0 ALTERNATIVES.....	2-1
2.1 INTRODUCTION.....	2-1
2.2 PROCESS.....	2-1
2.2.1 Phase 1 – Pre-Design and Scoping.....	2-1
2.2.2 Phase 2 – Design	2-3
2.2.3 Phase 3 – EIS Preparation	2-4
2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY.....	2-4
2.3.1 Leave Reach 11 in Its Current State.....	2-4
2.3.2 Habitat Enhancement Only – No Active Recreation Facilities.....	2-4
2.4 ALTERNATIVES STUDIED IN DETAIL	2-12
2.4.1 No-Action Alternative.....	2-14
2.4.2 Proposed Action	2-15
2.4.3 Alternative 1 (Passive Plan).....	2-18
2.4.4 Alternative 2 (Active Plan)	2-19
2.5 RESULTS.....	2-22

3.0	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	3-1
3.1	INTRODUCTION.....	3-1
3.2	CLIMATE	3-1
3.3	AIR QUALITY	3-3
	3.3.1 Issues and Concerns	3-3
	3.3.2 Data Collection.....	3-3
	3.3.3 Resource Overview	3-4
	3.3.4 Environmental Consequences	3-4
	3.3.5 Mitigation Measures.....	3-5
3.4	WATER RESOURCES.....	3-6
	3.4.1 Issues and Concerns	3-6
	3.4.2 Data Collection.....	3-6
	3.4.3 Resource Overview	3-7
	3.4.4 Environmental Consequences	3-11
	3.4.5 Mitigation Measures.....	3-15
3.5	EARTH RESOURCES	3-16
	3.5.1 Issues and Concerns	3-16
	3.5.2 Data Collection.....	3-16
	3.5.3 Resource Overview	3-16
	3.5.4 Environmental Consequences	3-19
	3.5.5 Mitigation Measures.....	3-20
3.6	BIOLOGICAL RESOURCES	3-21
	3.6.1 Issues and Concerns	3-21
	3.6.2 Data Collection.....	3-21
	3.6.3 Resource Overview	3-22
	3.6.4 Environmental Consequences	3-27
	3.6.5 Mitigation Measures.....	3-33
3.7	LAND USE	3-34
	3.7.1 Issues and Concerns	3-34
	3.7.2 Data Collection.....	3-34
	3.7.3 Resource Overview	3-34
	3.7.4 Environmental Consequences	3-35
	3.7.5 Mitigation Measures.....	3-37
3.8	RECREATION RESOURCES	3-37
	3.8.1 Issues and Concerns	3-37
	3.8.2 Data Collection.....	3-37
	3.8.3 Resource Overview	3-38
	3.8.4 Environmental Consequences	3-39
	3.8.5 Mitigation Measures.....	3-40
3.9	SOCIOECONOMIC RESOURCES	3-41
	3.9.1 Issues and Concerns	3-41
	3.9.2 Data Collection.....	3-41
	3.9.3 Resource Overview	3-41
	3.9.4 Environmental Consequences	3-45
	3.9.5 Environmental Justice	3-48
	3.9.6 Mitigation Measures.....	3-49

3.10	VISUAL RESOURCES	3-49
	3.10.1 Issues and Concerns	3-49
	3.10.2 Data Collection.....	3-49
	3.10.3 Resource Overview	3-49
	3.10.4 Environmental Consequences	3-51
	3.10.5 Mitigation Measures.....	3-53
3.11	CULTURAL RESOURCES	3-53
	3.11.1 Issues and Concerns	3-53
	3.11.2 Data Collection.....	3-53
	3.11.3 Resource Overview	3-54
	3.11.4 Environmental Consequences	3-56
	3.11.5 Mitigation Measures.....	3-58
3.12	NOISE	3-58
	3.12.1 Issues and Concerns	3-58
	3.12.2 Data Collection.....	3-58
	3.12.3 Resource Overview	3-59
	3.12.4 Environmental Consequences	3-59
	3.12.5 Mitigation Measures.....	3-63
3.13	SUMMARY OF MITIGATION MEASURES	3-64
3.14	SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS	3-66
3.15	CUMULATIVE EFFECTS	3-66
3.16	SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY	3-69
3.17	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.....	3-70
4.0	CONSULTATION AND COORDINATION.....	4-1
4.1	PLANNING REQUIREMENTS AND REGULATIONS.....	4-1
4.2	PROJECT CONSULTATION	4-3
4.3	AGENCY AND PUBLIC SCOPING	4-4
	4.3.1 Equestrian Groups	4-5
	4.3.2 Recreation Groups.....	4-6
	4.3.3 Environmental Organizations.....	4-6
	4.3.4 Government Agencies	4-6
	4.3.5 Developers.....	4-6
	4.3.6 Indian Tribes	4-7
4.4	AGENCY CONSULTATION	4-7
4.5	PUBLIC PARTICIPATION ACTIVITIES	4-7
	4.5.1 Media Coverage	4-8
	4.5.2 Newsletter and Mailing List.....	4-8
	4.5.3 Posted Notice.....	4-8
	4.5.4 Community Open Houses and Public Scoping Meetings	4-8
	4.5.5 Parks Board Meetings	4-9
4.6	DRAFT ENVIRONMENTAL IMPACT STATEMENT REVIEW.....	4-9
	REFERENCES CITED	R-1
	LIST OF PREPARERS AND CONTRIBUTORS.....	L-1
	EIS DISTRIBUTION LIST	DL-1

INDEX	I-1
-------------	-----

LIST OF TABLES

ES-1	Environmental Effects Associated with Each Alternative	ES-10
1-1	Current and Projected Population and Employment	1-3
2-1	Active Recreation Activities	2-8
2-2	Passive Recreation Activities	2-9
2-3	Special Event Activities	2-11
2-4	Environmental Comparison of the Alternatives	2-24
3-1	Summary of Recorded Precipitation – Phoenix, Arizona	3-2
3-2	Summary of Recorded Temperatures – Phoenix, Arizona	3-3
3-3	Annual Water Allotments	3-8
3-4	General Water Quality Criteria	3-10
3-5	Restrictive Soil Features for Development	3-18
3-6	FWS Threatened, Endangered, or Candidate Species within Maricopa County	3-26
3-7	Historic Population Growth within the Project Vicinity	3-43
3-8	Population Projections within the Project Vicinity	3-43
3-9	Labor Force and Employment Data in the Project Vicinity	3-44
3-10	Household Income in the Project Vicinity	3-44
3-11	Race and Hispanic Origin of the Population in the Project Vicinity	3-45
3-12	Probable Costs Associated with Implementing the Proposed Action	3-47
3-13	Probable Costs Associated with Implementing Alternative 1	3-47
3-14	Probable Costs Associated with Implementing Alternative 2	3-48
3-15	Resource-Specific Mitigation Measures	3-64
3-16	Irreversible and Irrecoverable Commitment of Resources	3-70
4-1	Public Meeting Attendance	4-4
4-2	Community Interviews	4-5

LIST OF FIGURES

1-1	Location Map	1-2
2-1	Existing Park Sites	2-5
2-2	Existing School Sites	2-6
2-3	Existing Golf Courses	2-7
2-4	Zone Map	2-12
2-5	No-Action Alternative	2-15
2-6	Proposed Action	2-16
2-7	Alternative 1	2-19
2-8	Alternative 2	2-20
2-9	Summary Comparison of Alternative Recreation Activities	2-22

3-1 Hydrology..... 3-9
3-2 Site Inventory and Surrounding Land Use..... 3-23
3-3 Census Data Tracts..... 3-42

LIST OF APPENDICES

A Scoping Letters from Agencies
B Additional Tabular Resource Information
C Air Quality Impact Assessment
D Written Comments on the DEIS and Agency Responses

LIST OF ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
APS	Arizona Public Service
ASU	Arizona State University
CaCO ₃	calcium carbonate
CAP	Central Arizona Project
CCWRF	Cave Creek Water Reclamation Facility
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFU	colony forming units
City	City of Phoenix
COE	U.S. Army Corps of Engineers
dB	decibel(s)
dBA	A-weighted decibel(s)
DEIS	draft environmental impact statement
DES	Arizona Department of Economic Security
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
FCDMC	Flood Control District of Maricopa County
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FWCA	Fish and Wildlife Coordination Act of 1934
FWS	U.S. Fish and Wildlife Service
GWSI	Groundwater Site Inventory
HUD	U.S. Department of Housing and Urban Development
L _{dn}	24-hour day-night noise level expressed in decibels
Leq	equivalent steady-state, A-weighted sound level
Leq(h)	the Leq for one hour

mg/L	milligrams per liter
MGD	million gallons per day
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPN	most probable number
NAAQS	National Ambient Air Quality Standards
NCDC	National Climatic Data Center
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NOA	Notice of Availability
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRPA	National Recreation and Parks Association
NTU	nephelometric turbidity unit
NWS	National Weather Service
PDEIS	preliminary draft environmental impact statement
PFU	plaque forming units
PM ₁₀	particulate matter of 10 microns or less in size
PM ₃₀	particulate matter of 30 microns or less in size
PRD	City of Phoenix Parks and Recreation Department
Reach 11	Reach 11 Recreation Area
Reclamation	U.S. Bureau of Reclamation
RLUA	1986 Recreation Land Use Agreement
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	State Route
TPC	Tournament Players Club
TSP	total suspended particulates
U.S.C.	United States Code
UV	ultraviolet
VMT	vehicle miles traveled

UNIT CONVERSION GUIDE

For the reader's convenience, the following table has been included to serve as a guide in converting measurements found in this document between U.S. measurements and metric.

CONVERSION OF U.S. TO METRIC MEASUREMENTS	
U.S. Measurement	Metric Measurement
Distance	
1 inch	2.54 centimeters
1 foot	0.31 meter
1 mile	1.61 kilometers
Area	
1 square foot	0.09 square meter
1 acre	0.41 hectare
CONVERSION OF METRIC TO U.S. MEASUREMENTS	
Metric Measurement	U.S. Measurement
Distance	
1 centimeter	0.39 inch
1 meter	3.28 feet
1 kilometer	0.62 mile
Area	
1 square meter	10.76 square feet
1 hectare	2.47 acres