

Table of Contents

	Page
Chapter 1. Introduction	1-1
PURPOSE AND DOCUMENT CONTENTS.....	1-1
PROJECT BACKGROUND	1-1
LOCATION OF PROJECT SITE.....	1-2
PROJECT GOALS	1-2
RELATED STUDIES AND PROJECTS	1-4
San Joaquin River Parkway Plan	1-4
San Joaquin River Riparian Habitat Restoration Program	1-4
Fresno-Clovis Storm Water Quality Monitoring Program 1997-1998 Annual Report.....	1-5
Phase I Environmental Site Assessment.....	1-5
Tom MacMichael Sr. Loop Trail Environmental Assessment	1-5
Chapter 2. Existing Conditions and Site Assessment	2-1
ENVIRONMENTAL SETTING AND NATURAL RESOURCES	2-1
Geology and Topography	2-1
Soils.....	2-1
Floodplain Hydrology.....	2-3
Water Quality.....	2-3
Vegetation.....	2-5
Wildlife Resources.....	2-6
SOCIOECONOMIC CONDITIONS.....	2-8
Cultural Resources	2-8
Land Use and Property Ownership.....	2-11
Infrastructure.....	2-12
Regulatory Compliance	2-15
Mosquito Abatement.....	2-17
Chapter 3. Project Elements and Alternatives	3-1
INTRODUCTION	3-1
PROJECT ELEMENTS.....	3-1
Habitat Protection and Enhancement Elements.....	3-2
LAND MANAGEMENT ELEMENTS.....	3-8
Public Access Elements	3-9
RESTORATION ALTERNATIVES.....	3-10
No-Project Alternative	3-10
Alternative 1. Oxbow Lakes	3-10
Alternative 2. High Terrace	3-11
Alternative 3. Lowered Floodplain.....	3-12
ESTIMATED CONSTRUCTION COSTS.....	3-13

Chapter 4. Benefits Analysis	4-1
INTRODUCTION	4-1
Approach to the Benefits Analysis	4-1
Habitats Evaluated in the Benefits Analysis	4-2
BENEFITS ANALYSIS METHODS	4-3
Habitat Quality and Habitat Suitability Index Models	4-3
Evaluation Period and Model Target Years	4-4
BENEFITS ANALYSIS RESULTS	4-4
Analysis of the Project Alternatives	4-4
DISCUSSION OF RESULTS FOR ALTERNATIVES ANALYSIS	4-5
Project Goals	4-5
Benefits Analysis	4-6
Chapter 5. Implementation Strategies and Analysis of Restoration Element Options	5-1
INTRODUCTION	5-1
Implementation Strategies	5-1
COST BENEFIT ANALYSIS OF RESTORATION ELEMENT OPTIONS	5-5
Approach to the Benefits Analysis	5-5
General Assumptions Used	5-6
Analysis of the Restoration Element Options	5-6
DISCUSSION OF RESULTS AND RECOMMENDATIONS FOR RESTORATION ELEMENT OPTIONS	5-7
Chapter 6. Preferred Alternative	6-1
PREFERRED ALTERNATIVE	6-1
APPLICABLE ENVIRONMENTAL REGULATIONS	6-1
General Project Permitting Requirements	6-1
Design-Element-Specific Requirements	6-2
Environmental Compliance	6-2
Chapter 7. Monitoring, Maintenance, and Land Management	7-1
MONITORING	7-1
MAINTENANCE	7-2
Plant Maintenance	7-3
DK Area Channel Maintenance	7-3
Infrastructure Maintenance	7-3
LAND MANAGEMENT PRACTICES	7-3
Mowing	7-4
Grazing	7-4
Chapter 8. Construction Phasing and Potential Funding Sources	8-1
CONSTRUCTION PHASING	8-1
Project-Specific Phasing Considerations	8-1
PHASING APPROACH	8-2
POTENTIAL FUNDING SOURCES	8-2
Chapter 9. References	9-1
Printed References	9-1
Personal Communications	9-3

Appendix A. Photos

Appendix B. Public Access Concept

Appendix C. Cost Estimates

Appendix D. Assumptions Used to Conduct the Benefits Analysis of Alternatives

Appendix E. Assumptions Used to Conduct the Benefits Analysis of Restoration Element Options

List of Tables

Table	Follows Page
2-1 Master Special-Status Wildlife Species Table.....	2-8
3-1 Jensen River Ranch Project Elements and Project Scenarios.....	3-10
3-2 Summary of Preserved and Restored Habitat Acres under the No-Project Alternative and the Project Alternatives.....	3-10
3-3 Summary of Estimated Cost for Each Alternative.....	3-13
4-1 Corresponding Nomenclature Used in the Benefits Analysis and in the Final Plan	4-2
4-2 Habitats Present or Proposed for the No-Project and Project Alternatives	4-2
4-3 Models Used to Conduct the Benefits Analysis	4-4
4-4 Target Years Used in the Benefits Analysis	4-4
4-5 Average Annual Habitat Units Provided under Each Alternative	4-4
4-6 Change in Average Annual Habitat Units Provided under Each Alternative.....	4-4
4-7 Cost per Average Annual Habitat Unit under Each Alternative.....	4-4
4-8 Alternatives Analysis Project Goal Summary Table	4-6
5-1 Description of Restoration Methods for Low, Moderate, and High End Restoration Element Options for Each Habitat Type.....	5-4
5-2 Recommended Plant Species for Plant Community Types	5-6
5-3 Per-Acre Average Annual Habitat Units Provided by Each Restoration Element Option	5-6
5-4 Cost per Acre by Restoration Element Option	5-6
5-5 Cost of Average Annual Habitat Units per Acre	5-8
8-1 Example of Construction Phasing Approach.....	8-2
8-2 Potential Sources of Assistance for Project Implementation.....	8-3

List of Figures

Figures	Follows Page
1-1 Location Map.....	1-2
2-1 Soils	2-2
2-2 Vegetation Types	2-6
2-3 Land Use	2-12
2-4 Infrastructure.....	2-12
3-1 Conceptual Cross Section Through Woodland Visual Buffer.....	3-4
3-2 Conceptual Cross Section Through Backwater Slough.....	3-4
3-3 Conceptual Cross Section Through Oxbows	3-6
3-4 Model Results of Water Depth for Oxbow 1 Using Daily Fresno Station Data for 10-Years	3-6
3-5 Modeling Results for Depth and Duration of Water with the Constructed Oxbows	3-6
3-6 Conceptual Cross Section Through Drainage.....	3-6
3-7 Conceptual Cross Section Through DK Area Channel.....	3-6
3-8 Alternative 1: Oxbow Lakes	3-10
3-9 Alternative 2: High Terrace	3-12
3-10 Alternative 3: Lowered Floodplain.....	3-12
4-1 Average Annual Habitat Units Provided by Each Alternative	4-4
4-2 Cost per AAHU for Each Habitat Type under Alternatives 1, 2, and 3	4-4
5-1 Annual Average Habitat Units per Acre Provided by Each Restoration Element Option	5-6
5-2 Cost of Annual Average Habitat Unit per Acre Generated by Restoration Elements	5-8