Volume 1 of 2

Final Feasibility Report and Environmental Impact Statement

Rio Salado Oeste

Salt River-Phoenix, Arizona

Prepared by:

US Army Corps of Engineers

Los Angeles District

South Pacific Division

City of Phoenix

September 2006

EXECUTIVE SUMMARY

This report summarizes technical and feasibility study planning efforts undertaken to date to establish existing, future without-project, and future with-project conditions within the Rio Salado Oeste, Salt River study area in Phoenix, Arizona, to examine the measures and alternatives developed, and to present a recommended plan. This Feasibility Report serves to document plan formulation efforts in the development of potential alternatives for ecosystem restoration. These efforts will culminate in a complete feasibility report that identifies and recommends an implementable solution to improve the overall ecological health of the river and reestablish a more stable, less degraded, and sustainable condition.

The primary problem and focus of much of the efforts discussed in the report relates to the severe degradation and loss of riparian habitat along the Salt River. Historically, the study area supported significant biological resources including extensive riparian and marsh habitats. Urban development, diversion of water to support agriculture, and domestic livestock grazing have eliminated or altered most of the natural vegetation communities that occupied the study area leaving only scattered remnants of the original vegetation communities. Modifications of the river system, such as damming and flow diversion, currently do not allow flows through the study area except during flood events. In addition, sand and gravel mining operations have induced additional changes to the river channel and hydrology. As diversions of water increased, the perennial flows in the river ceased, causing the groundwater table to drop. These changes in hydrological conditions caused the natural riparian ecosystem to decline resulting in only small, isolated fragments of this former habitat remain. Today, the study area consists of a highly disturbed riverbed with minimal extant native vegetation.

This Feasibility Report includes identification of problems, opportunities, constraints, and planning objectives. A wide range of technical issues were analyzed with the goal of developing an accurate description of historic, existing, and future without-project conditions within the study area. This baseline assessment serves to identify, confirm, and refine problems, opportunities, and planning objectives and to guide the formulation of solutions. The major technical areas of focus for the study include hydrology and hydraulics, vegetation and wildlife habitat, cultural resources, projections on growth and development, and water availability and extent, particularly in reference to its effect on the riparian zone. Chapter 4 of this report details all of the areas of evaluation that comprise the without-project conditions. Detailed documentation of technical studies is included in the study's Technical Appendices, under separate cover. This report also develops and discusses potential solutions as a guide to potential Federal and non-Federal involvement in a restoration project and as a resource to assist in the decision-making. It provides a description and discussion of the likely array of alternative plans, including their benefits, costs, and environmental effects, and outputs. Chapter 5 of this report presents the results of the plan formulation process used in the development of alternatives. Assessments of the impacts of each alternative are also presented in Chapter 5. Chapter 6 identifies and describes the coordinated implement able solution that best meets the planning objectives of a comprehensive ecosystem restoration through the study area.

This study effort is a joint partnership of the City of Phoenix and the Corps of Engineers, Los Angeles District. A wide variety of management measures were identified for use in developing full-scale alternatives.

Based on the cost-effectiveness and incremental cost evaluation, together with the analysis of impacts in the system of accounts and associated evaluation criteria, Alternative 5A is the plan that reasonably maximizes net ecosystem restoration benefits by having the maximum amount of restoration benefits compared to costs. Therefore, Alternative 5A is identified as the NER Plan and is presented as the recommended plan to be considered for implementation.

The total first cost of the project is currently estimated at $164,950,295 ($153,776,850 for ecosystem restoration and $11,173,445 for recreation). Based on the requirements of WRDA 1986, cost-sharing for ecosystem restoration features including all lands, easements, rights-of-way, relocations, and disposal areas (LERRDs) would be 65 percent Federal and 35 percent non-Federal. Cost sharing for the recreation plan would be 50 percent Federal and 50 percent non-Federal, or 0 percent Federal and 100 percent non-Federal, depending upon the features. USACE guidance (ER 1105-2-100, Appendix E) specifies that the level of financial participation by the Corps in recreation development may not increase the Federal cost of the project by more than 10 percent. Thus, the Federal share is currently estimated at $105,541,675 ($ 99,954,952.50 for ecosystem restoration and $5,586,722.50 for recreation). The cost for all operations and maintenance would be the responsibility of the non-Federal sponsor. Annual operation and maintenance for the ecosystem restoration project and recreation is currently estimated at $2,083,000 and $800,000 respectively. In addition, all water rights and costs associated with providing water to the project shall be borne by the non-Federal sponsors. The value of this water has been estimated at $817,000 annually.

The recommended plan provides a habitat value of 847 AAFCU's, or an increase in 267 AAFCU's over without-project conditions. This is a 46 percent increase with project implementation.

The analysis presented in this report shows that the recommended plan is feasible and would provide environmental restoration benefits that serve the public interest. Therefore, it is recommended that the Recommended Plan described herein for ecosystem restoration be authorized for implementation as a Federal project, with such modifications as in the discretion of the Chief of Engineers that may be advisable, and subject to cost sharing and financial arrangements satisfactory to the President and Congress.

TABLE OF CONTENTS

TABLE OF CONTENTS

(continued)

TABLE OF CONTENTS

(continued)

TABLE OF CONTENTS

(continued)

TABLE OF CONTENTS

(continued)

LIST OF TABLES

TABLE OF CONTENTS

(continued)

TABLE OF CONTENTS

(continued)

LIST OF FIGURES

TABLE OF CONTENTS

(continued)

LIST OF APPENDICES

(under separate cover)