US Army Corps of Engineers
Los Angeles District

Santa Cruz River, Paseo de las Iglesias
Pima County, Arizona

Final Feasibility Report

APPENDIX I

REAL ESTATE PLAN

July 2005

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

EXECUTIVE SUMMARY

1. Project Location:

The Paseo de las Iglesias Feasibility Study Area consists of a 7.5-mile reach of the Santa Cruz River and adjacent lands, totaling 5,005 acres, within the City of Tucson and Pima County, Arizona. More specifically, the study area consists of the Santa Cruz River Valley between Los Reales Road and West Congress Street. Interstate highways 10 and 19 define the eastern boundary of the study area and Mission Road the western boundary. The proposed project area consists of approximately 1,223 acres of undeveloped lands situated within the larger study area (Figure 1).

2. Real Estate Requirements Summary:

The project would encompass 1,223 acres situated within the river channel and historic floodplain of the Santa Cruz River and the West Branch tributaries. Some associated side drainages and channels that feed these rivers are also included in the project. The land is all subject to floodplain and floodway restrictions that place significant limitations on its highest and best use or development. According to the project gross appraisal, the property is within the historic floodplain and the highest and best use of these properties is for flood control purposes. Zoning is for a "River Park" according to the Santa Cruz Area Plan.

A table of the real estate or Lands, Easements, Rights-of-way, Relocation, and Disposal Areas (LERRDs) requirements in summary fashion is presented as follows:

Land Category	Number of Parcels	Acreage	Gross Appraisal Est. ($)
City of Tucson	64	512	3,322,296
Pima County (NFS)	27	110	4,717,140
Unnumbered Parcels-include storm drains and drainage ROW in project area	22	30	97,069
Private Tracts	77	557	15,170,007
State of Arizona	1	14	635,594
TOTALS	191	1,223	23,942,106

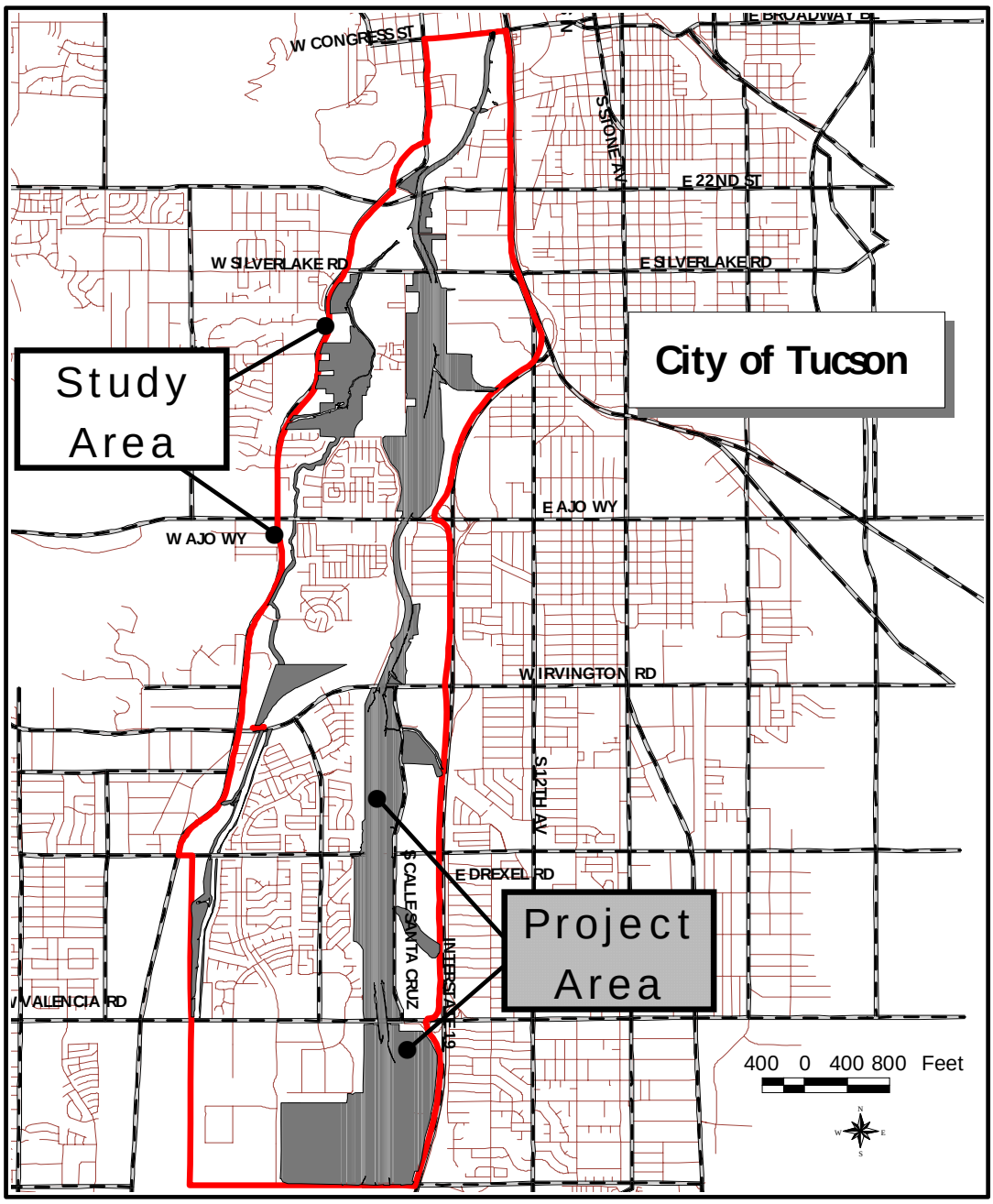

Figure 1: Study and Project Area Boundaries

Appendix I: Real Estate Plan

Santa Cruz River, Paseo de las Iglesias, Arizona Feasibility Study

Abstract of Project Data:

Project Name: Santa Cruz River, Paseo de las Iglesias, Arizona

Location: Pima County, Arizona

Project Purpose: Ecosystem Restoration and Recreation

Acreage: 1,223 Acres

Gross Appraisal Estimate: $23,942,106

Estimate with Contingency: $26,242,106

Non-Federal Sponsor: Pima County Dept. of Transportation and Flood Control District.

1. Introduction:

The Santa Cruz River (Paseo de las Iglesias), Arizona Feasibility Study is being performed to investigate water resources related problems and provide potential solutions to these identified problems. The primary problem identified is ecosystem degradation, which is the focus of the Feasibility Study and this Real Estate Plan (REP).

The Paseo de las Iglesias project area consists of a 7.5-mile reach of the Santa Cruz River and its tributary washes, beginning where Congress Street crosses the river in downtown Tucson and extending upstream along the river to Los Reales Road. Los Reales Road is the northern boundary of the San Xavier District of the Tohono O'odham Nation. The eastern boundary of the study is Interstates 10 and 19. The western study boundary coincides with Mission road. The study area comprises urban and suburban Tucson and unincorporated areas of Pima County and is depicted in Figure 1.

The Santa Cruz River has experienced large-scale channel degradation and lateral migration over the last century. Extensive groundwater overdraft and the impacts of urbanization have resulted in the loss of critical Sonoran Desert riparian habitat and overall ecosystem degradation. Without a project, this trend is expected to continue with the continued urbanization of Tucson. The project would establish the corridor as a restored and protected riparian area, maintained for its environmental benefits and attributes.

2. Authority:

The statutory authority for this project is contained in the following enacted laws:

Paseo de las Iglesias, Pima County, Arizona Feasibility Report was specifically authorized by section 212 of the Water Resources and Development Act of 1999, Pub. L. No. 106-53, 33 U.S.C. 2332. Section 2332(a) states:

> *The Secretary [of the Army] may undertake a program for the purpose of conducting projects to reduce flood control hazards and restore the natural functions and values of rivers throughout the United States.*

Subsection (b)(1), 33 U.S.C. 2332(b)(1), provides authority to conduct specific studies "to identify appropriate flood damage reduction, conservation, and restoration measures." Subsection (c), 33 U.S.C. 2332(c), states the cost-sharing requirement applicable to studies and project conducted pursuant to section 2332. Subsection (e), 33 U.S.C. 2332(e), identifies priority areas. It states in pertinent part:

> *In carrying out this section, the Secretary shall examine appropriate locations, including--*

(1) Pima County, Arizona, at Paseo de las Iglesias and Rillito River; . . . .

Authority for project implementation would be sought in an upcoming Water Resources Development Act as a separately authorized civil works project.

3. Purpose of this Report:

The purpose of this Real Estate Plan (REP) is to support the Santa Cruz River Paseo de las Iglesias, Arizona Feasibility Study decision document to be submitted as the basis of project authorization in the next Water Resources Development Act.

4. Sponsor Capability:

The Non-Federal Sponsor is a duly organized municipal organization in the State of Arizona, and is vested with sufficient power to acquire and hold title, and to condemn lands as needed for public purposes. The sponsor has previously participated in other Corps of Engineers' Local Cooperation Projects, such as the Rillito River Flood Control and Bank Stabilization Project, and has demonstrated their capabilities in acquiring real estate and performing the related obligations of a Non-Federal Sponsor.

5. Description of Recommended Plan:

The Recommended Plan, Alternative 3E, is characterized by the commitment of water to create an intermittent flow channel supporting adjacent growth of emergent wetlands and cottonwood-willow gallery forest. Additional areas on terraces above the channels and in the historic floodplain would be irrigated to sustain mesquite bosques interspersed with riparian shrub. Reclaimed water is the recommended water source to support the ecosystem restoration. Water harvesting (delaying and temporarily storing or rerouting rain and storm events) is also a source of supplemental water.

There are no associated “LERRD” costs with these water sources that have been identified at this time. Providing sustainable water to the project is a non-Federal responsibility for operating and maintaining the project, similar to providing any other utility or service.

Implementation of this alternative involves constructing a low flow channel that would convey released flows through the entire length of the Santa Cruz River within the project boundaries. This feature would be constructed in a manner to help direct infiltration losses from the intermittent flow toward restored habitat areas to be created on either side of the channel.

The areas on each side of the low flow channel would include a narrow band where soil saturation conditions resulting from infiltration would be conducive to emergent marsh. Cottonwood and willow would be planted on low terraces adjacent to the emergent marsh to further utilize infiltrating water from the intermittent channel.

To prevent conveyance impacts that could result from such features, plantings on lower terraces in the channel would be limited to riparian grasses and managed to limit growth of denser, more resistant vegetation. The higher terraces would be planted with mesquite and riparian shrubs. The plan also includes construction and planting of stormwater harvesting basins at the confluences of 8 tributaries, and permanent irrigation systems for all planted areas including the aquitards.

Cutting back into the historic floodplain to create gentler and more stable slopes would modify the reaches of steep, eroded banks. Where the sponsor enjoys sufficient existing lands to accommodate this measure, banks would be graded at a 5-foot horizontal to 1-foot vertical slope and planted. In those areas where sufficient land is not available, the banks would be laid back to the minimum slope that can fit into the available space. These slopes would also be vegetated. However, a geotextile layer would be installed before planting to increase slope stability. This treatment is not intended to prevent lateral channel migration during catastrophic events. However, it would reestablish a hydrologic connection to the river and reduce the frequency of bank failure during intermediate events.

The estimated Fair Market Value of approximately 200 parcels in the project is $23,942,106. Additional incidental costs associated with acquisition would include, but are not limited to, administration, title, closing, appraisals, survey, attorneys and mapping. These are estimated at 10% of acquisitions total Fair Market Value, or $2.3 million. This provides a grand total LERRD acquisition and estimated LERRD cost of $26,242,106.

.

6. Land Use and Acreage Allocations:

Application of sound real estate principles, including blocking out along regular and definable boundaries, minimizing severance, and maintaining usable and economic remainders outside the project area, have designated the project footprint. The project footprint is deemed sufficient to accommodate the construction, operation, maintenance, repair and replacement of the proposed project.

A summary of the real estate land requirements is as follows:

Land Category	Number of Parcels	Acreage	Gross Appraisal Est. ($)
City of Tucson	64	512	3,322,296
Pima County (NFS)	27	110	4,717,140
Unnumbered Parcels-include storm drains and drainage ROW in project area	22	30	97,069
Private Tracts	77	557	15,170,007
State of Arizona	1	14	635,594
TOTALS	191	1,223	23,942,106

All of the acreage recommended to support the project is allocated to the purposes of ecosystem restoration. There are no separable recreation lands involved in this project.

It is recommended here that the lands to be acquired from the City of Tucson and the State of Arizona be acquired in fee simple title (see also Section 14). In the event that the Non-Federal Sponsor is unable to acquire lands owned by the State of Arizona, these lands should be removed from the project area and restoration measures identified for the state lands be relocated elsewhere within the project area. Currently, no future development plans or facilities have been identified for the State and City owned lands.

7. Federal Lands, Interests or Reservations:

There are no Federally owned lands, interests or reservations within the study or project area.

8. Navigational Servitude:

The Santa Cruz River main stem and associated tributaries are ephemeral and non-navigable. They do not and cannot sustain navigation. Therefore, there is no availability of a navigational servitude for this project.

9. Description of Lands:

a. General Description:

The proposed project area consists of 1,223 acres located in and around the Santa Cruz River, West Branch and tributaries. The project area is within the City of Tucson. The area is an irregular shape, and includes the river channel, terraces, and adjacent lands. The northern boundary is Congress Street. The southern boundary is the Los Reales

Road alignment. The surrounding study environs are surrounded by residential zoning, but also include commercial, industrial, and public use zoning. Lands included in the delineated project area are not improved.

b. Lands Owned by Non-Federal Sponsor:

Properties owned by the Non-Federal Sponsor, Pima County, include retired agricultural lands, flood prone lands, drainage ways, and open space properties located in and around the Santa Cruz River, West Branch and tributaries.

10. Project Maps:

Project maps are included in Chapters V and VI of the Main Feasibility Report and in the Design Appendix.

11. Crediting for LERRD's:

Crediting would follow standard procedures as set out in a model Project Cooperation Agreement (PCA). No Credit would be afforded to any lands or interests previously acquired and credited for any applicable Corps of Engineers Project.

Credit would only be applied to the acreage within the "project footprint", namely the lands or corridor required to implement the recommended ecosystem restoration plan. Lands outside of the project requirements and lands that may be acquired for the sponsor's own purposes would not be creditable LERRD's. Only lands deemed necessary for project completion have been included.

Corps policy prescribes that credit would not afforded for lands purchased with Federal funds or grants where the granting of such credit is not permissible, either as prescribed by statute, or as determined by the head of the Federal agency administering such grants or programs. The Federal Emergency Management Agency's (FEMA's) floodplain hazard mitigation and elimination grants are examples of such Federal grant programs where credit would not be allocated.

12. Facility Relocations:

Preliminary review of existing utility maps did not reveal significant conflicts which would result in utility relocations in the project area. Further engineering and design work would refine requirements for facility relocations during subsequent phases of the study and Pre-Construction Engineering and Design (PED), if approved for implementation. Because the objectives and aims of this project are for ecosystem restoration, riparian habitat and similar benefits, the approach taken during feasibility is to leave utilities, river and bridge crossings and infrastructure in place. The engineering and design for riparian restoration would "work around" and consider the constraints of all existing infrastructure. The project is aimed at producing the maximum outputs for ecosystem restoration while minimizing or avoiding unneeded expenditures to replace or relocate existing utility infrastructure.

Note: The following policy statement and disclaimer concerning any potential facility relocations prevails over any other statement, description or presentation in this report:

Any conclusion or categorization contained in this report that an item is a utility or facility relocation to be performed by the Non-Federal Sponsor as part of its LERRD responsibilities is preliminary only. The Government will make a final determination of the relocations necessary for the construction, operation and maintenance of the project after further analysis. An Attorney's Opinion of Compensability will be generated for each facility/utility relocation and that is required for the project and which will be performed by, and credited to, the Non-Federal Sponsor under the definitions and terms of the PCA.

13. Mineral Activity:

The impacts of sand and gravel extraction are present at two locations within the study area. The currently inactive Cottonwood Lane pit is located in Township 14, Range 13, Section 26 on a 10.7 acre parcel that entirely contains the 3.5 acre pit. The pit is located approximately 1000 feet east of the river channel invert and the pit bottom is approximately 25 feet below the invert elevation. The parcel is owned by a group of private individuals. On Sept. 5, 2002, the City of Tucson denied a request to resume operations that was submitted by the owner's agent, Dale A. Deming, P.E. Past permits have expired. Due to the current lack of activity and the prohibition to resume activity, the acquisition of this parcel is not anticipated to be problematic.

The San Xavier Pit is made up of numerous parcels within Township 15, Range 13, Sections 14 and 15. The pit and associated processing land occupy almost 400 acres, although the Santa Cruz River and its banks bisect the operation. The operators, Union Rock Materials, own the bulk of area although some properties in the northwest area of the pit are leased. Leased properties within the study area (south of Cheney Road) would also be pursued for acquisition. The total area of the pit includes approximately 240 acres. Mineral excavation has taken place on both sides of the Santa Cruz River, approximately 200 feet away from the river channel. The pit bottom is approximately 25 feet below the invert elevation. On Sept. 5, 2002, the City of Tucson denied a request to expand operations that was submitted by the owner's agent, Kent A. Delph, P.E. Past sand and gravel extraction permits have expired. The property is currently undergoing some remediation and is also being used for limited industrial purposes. Due to the current waning of activity and the prohibition to resume sand and gravel extraction, the acquisition of this parcel is not anticipated to be problematic. The gross appraisal has taken the existing mineral uses, where they occur, into consideration.

14. Recommended Estate:

The recommended estates for ecosystem restoration are fee simple title or fee dedicated right-of-way.

15. Construction-Induced Flooding:

This river is ephemeral and dry. Appropriate measures would be taken for the care and diversion of water, if needed, during construction. There would be no construction-induced flooding.

16. Baseline Cost Estimate:

Baseline cost estimate for all lands, easements, and rights-of-way included in the recommended plan and including contingencies is $26,242,106

Actual LERRD crediting, should a project be authorized, would be governed by subsequent appraisals and reviewed and approved pursuant to the PCA.

This is deemed fully sufficient to cover any incidental and administrative costs as well, given the fact that 42 percent of the project acreage is owned by the City of Tucson. Pima County TFCD can acquire the necessary interests from the City of Tucson in a packaged real estate transaction, (one deed) minimizing incidental and administrative costs.

This is an estimate of potential project costs only for purposes of project feasibility and the total project cost estimate. It is not a representation of actual credit that may be approved should the project be approved and proceed toward implementation. Actual crediting shall follow the crediting and appraisals procedures set forth in a signed Project Cooperation Agreement, should the project proceed to that stage.

17. Relocation Assistance (URA Relocations):

The Non-Federal Sponsor will accomplish all property acquisitions in accordance with Public Law 91-646, as amended, and the Uniform Regulations as promulgated by the U.S. Department of Transportation. The property needed for the project footprint is largely unimproved and within the vacant floodplain and floodway. The project has been formulated such that there would not be any displacements of businesses or residences triggering relocation assistance benefits.

18. Other Matters, Other Property Interests, Use of Zoning:

No timber activity affects these lands. The sponsor is not using any zoning ordinances in lieu of acquisitions of lands or easements within the project take areas.

19. Hazardous Waste Assessments:

The Geotechnical Section(s) of the Feasibility Report and Technical Appendix F has been reviewed to determine possible impacts to real estate issues or values in the study area. There are some adjacent former existing landfills located outside of the project area, and project formulation has taken these into consideration so as to avoid impacts

to the maximum extent possible. The following are some highlighted portions of the Geotechnical discussion of hazardous waste In Section IV of the Feasibility Report:

"Five landfills have been documented within the study area boundaries …… however it does not appear that the river channel has been subject to prolonged commercial or industrial waste disposal activities."

"The landfills are located in the overall 5,005-acre study area, as distinct from the selected 1,223-acre project area. The project area has been delineated to avoid these landfills."

"Seventy two aerial photographs were reviewed….. The aerial photograph review did not reveal evidence of Reportable Environmental Conditions (RECs)."

"The site reconnaissance did not reveal evidence of any RECs"

The summary recommendation of the geotechnical reports is to utilize proper engineering and design, remove any uncompacted fill material or solid waste to address potential problems with lack of compaction or voids where any project structures may be located.

Based on the Phase 1 Environmental Site Assessment and Geotechnical evaluation of the project location(s), there do not appear to be any concerns of known or designated CERCLA regulated HTRW concerns affecting the project lands.

The sponsor fully understands its responsibilities for assessing the properties for any potential or presence of hazardous waste materials as defined and regulated under CERCLA. There are no known "Superfund" sites or sites presently under CERCLA remediation or response orders identified in the project area. There are no known presences of any substances in the project area that are regulated under CERCLA or other environmental statutes or regulations. The LERRD estimate is predicated on the assumption that all lands and properties are clean and require no remediation. The model PCA conditions contain specific terms and conditions governing the sponsor's responsibility for environmental cleanup for CERCLA regulated substances. Hazardous Waste Assessments are covered as a project cost under the model PCA.

20. Recreation:

There is no identified separable land (i.e., land acquired exclusively for recreation purposes for this project). All lands are allocated for the project purpose of ecosystem restoration.

21. Attitude of Landowners:

There is no focused or organized landowner opposition to the project. The sponsor will be conducting landowner and public information meetings to promote understanding of the project and explain how the landowners would be affected

22. Report Content:

This report follows the requirements of ER-405-1-12, Chapter 12, and has been prepared using the information on the project formulation that has been provided.