

**US Army Corps of Engineers
Los Angeles District**

**Santa Cruz River, Paseo de las Iglesias
Pima County, Arizona
Draft Feasibility Report**

**Appendix I
Real Estate Plan**

July 2004

**U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
Arizona/Nevada Real Estate Office**

EXECUTIVE SUMMARY

1. Project Location:

The Paseo de las Iglesias Feasibility Study Area is located within Pima County, Arizona and consists of a 7-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 that 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 proposed project area is comprised of approximately 1,223 acres of undeveloped lands within the City of Tucson and Pima County, Arizona and is depicted in Figure 1.

2. Real Estate Requirements Summary:

The project will encompass 1,223 acres situated within the river channel and historic floodplain of the Santa Cruz and West Santa Cruz rivers. 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, Relocations, and Disposal (LERRD) 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	1223	\$23,942,106

3. Rationale And Recommendation for Permanent Easement Estate.

Given the restrictions on much of this property and the current use by the public bodies involved, the City of Tucson and the Pima County Transportation and Flood Control District as flood ways, drainage ways, and flood control works, we are recommending for this specific project that a permanent channel improvement easement be used for implementing the project, specifically on the lands already owned and possessed by the city, county or state public agency. The proposed permanent easement estate based on a channel improvement easement is attached to this report for review and approval. This is considered adequate estate for construction, operation repair replacement etc of the project in this instance where the lands are publicly owned and already within the - designated floodway or floodplain channel of the river systems. Any and all easements will be permanent encumbrances on the land and cover all authorized project purposes. Permanent easements are recommended for permanent structures in or along the floodplain corridor such as levees and this project is similarly located within and along the floodplain corridor. Thus we see that permanent easements are recommended as a sufficient estate to construct, implement, operate and maintain this project, which consists of plantings within the corridor, creating terraces or channel forms, and so on.

The District recommends approval for accepting a permanent easement estate in lieu of fee for the real property currently owned by the City of Tucson and the State of Arizona based on the reasons stated in the Draft Real Estate Plan. The District recognizes that ER 405-1-12-8b generally requires the acquisition of fee title for ecosystem restoration projects but, after much investigation of the local situation, has reached the conclusion that same is not feasible.

The State of Arizona will only convey a permanent easement, not a fee interest, to city or county governments of lesser sovereignty. Further, the political and economic relationship of the parties, namely the City of Tucson and the Pima County Transportation and Flood Control District, is not conducive to permit a transfer of fee title from one entity to the other. However, the District has discovered that past practices between the two entities in public works involve the frequent and successful use of granting permanent easements to each other. As such, a lesser estate than fee is appropriate under the circumstances, especially in light of the fact that these particular lands are and have been publicly owned and exist within the designated floodway or floodplain channel of the river systems.

For privately held lands, such as lands owned now by sand and gravel operations or for other remnants or strips of privately owned lands situated within the project floodplain, the Non Federal Sponsor will acquire such lands in fee simple title. The acquisition of fee simple title on private property is recommended principally to eliminate undesired land uses in the floodplain that would conflict with restoration. This risk is not present for the city and county owned lands.

The Recommended Easement Estate is presented in Paragraph 14 of this Real Estate Plan. And has been written using a model estate from ER405-1-12 and specifically designed and written for the specifics of this project.

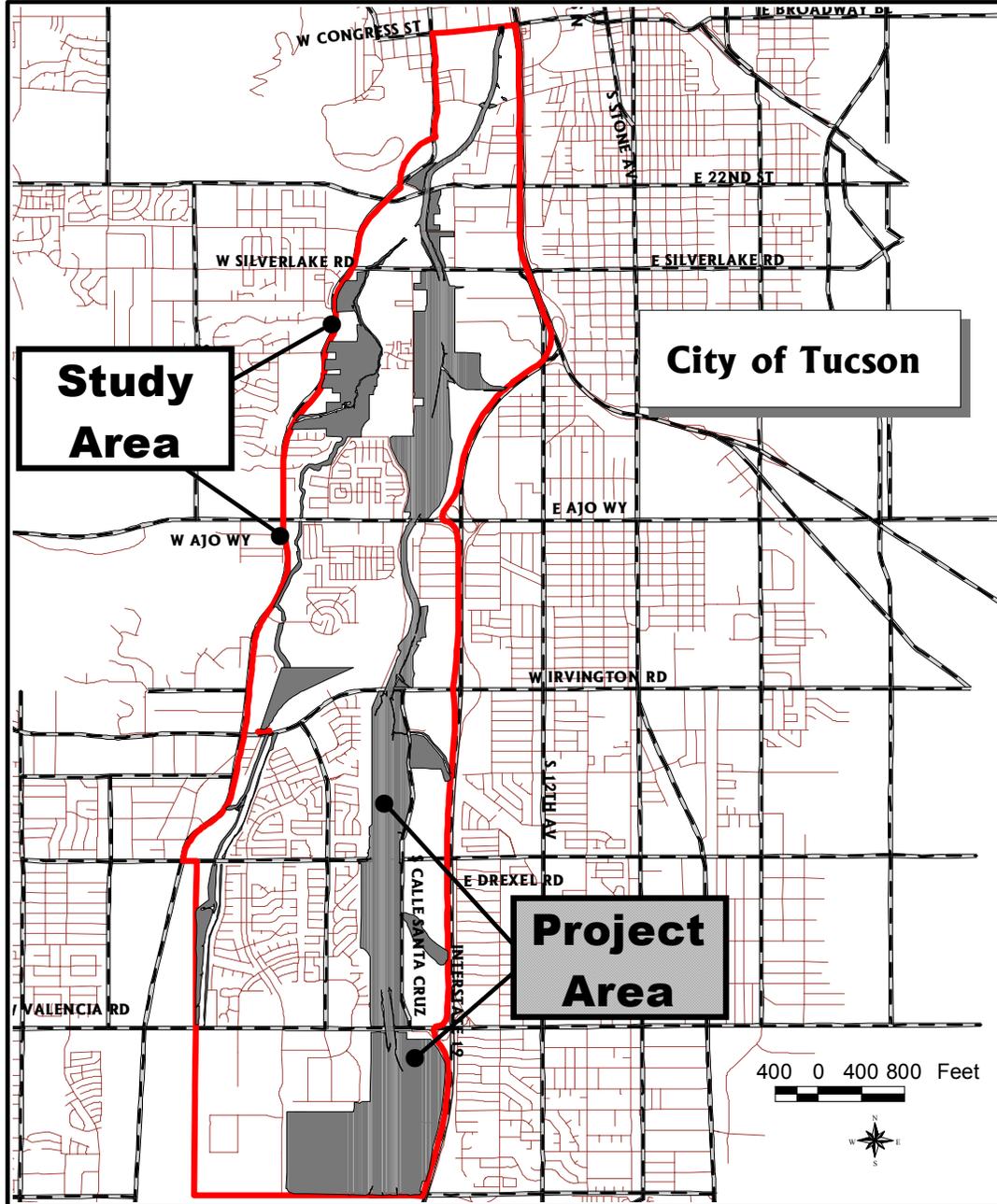


Figure 1: Study and Project Area Boundaries

Appendix I: Draft Real Estate Plan

Santa Cruz River (Paseo de las Iglesias), Arizona Feasibility Report

Abstract of Project Data:

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

Location: Pima County, Arizona

Project Purpose: Environmental Restoration

Acreage: 1223 Acres

Gross Appraisal Estimate \$23,942,106

Estimate with Contingency: \$26, 242,106

Project 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 that of 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 that 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 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 will 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:

Section 6, Public Law 761, Seventy-fifth Congress, dated June 28, 1938, which reads,

“The Secretary of War is hereby authorized and directed to cause preliminary examination and surveys at the following locations...Gila River and Tributaries, Arizona.”

Additional authority was provided by House Resolution 2425, dated March 17, 1994 stating:

“... The Secretary of Army is hereby requested to review reports of the Chief of Engineers on the State of Arizona... in the interest of flood damage reduction, environmental protection and restoration, and related purposes.”

Authority for project implementation will 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 Report 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 Corp 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 additional water to create a quasi-perennial 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 environmental restoration. Water harvesting, that is delaying and temporarily storing or rerouting rain and storm events is also a source of supplemental water.

Using these water sources, there are no associated “LERRD” costs with the acquisition of water. 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 will be constructed in a manner to help direct infiltration losses from the perennial flow toward restored habitat areas to be created on either side of the channel.

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

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

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 will 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 will be laid back to the minimum slope that can fit into the available space. These slopes will also be vegetated however; a geotextile layer will be installed before planting to increase slope stability. This treatment is not intended to prevent lateral channel migration during catastrophic events. However, it will reestablish a hydrologic connection to the river; reduce the frequency of bank failure during intermediate events.

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.

This estimate is based on the high end during this project formulation phase due to the decisions and directions to be undertaken latter in actual design of the project, which could materially alter some of the project assumptions made during feasibility. For example it is thought that some parcels may “fall out” of the final plan that would be actually constructed due to a myriad of reasons, including environmental considerations, public comment and review, neighborhood involvement or availability of lands for purchase or condemnation by the sponsor. The high contingency is pointed out to emphasize that this is only planning estimate and not a forecast or prediction of creditable LERRD contributions to be determined much latter in the project implementation phase. **It is also noted here that the actual LERRD expenditures are likely to be significantly less than this feasibility estimate.** Throughout the planning and formulation stages of this project, the NFS has been advised, and the study team has recognized the uncertainties and assumptions that have been made and the decisions still to be reached during ultimate design of and approved project, could and will affect the amount of land that will be used and credited toward the project.

It also is noted that more than almost one-third of the acreage to be acquired by Pima County Transportation and Flood Control District is owned by the City of Tucson and administrative and incidentals cost for acquiring this land will not be as high as acquiring private tracts.

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 footprint 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	1223	\$23,942,106

All of the acreage recommended to support the project is allocated to the purposes of environmental 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 permanent easement.

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 are non-navigable. They do not and cannot sustain navigation. The lands and channels necessary to accommodate the 100-year flood are regulated under the Federal Emergency Management Agency's programs including the National Flood Insurance Program and the various Federal programs for elimination or mitigation of damages within floodplains.

Project formulation has taken the 100-year flood into account in analysis of Hydrology and Hydraulics (“H&H”) to ensure the project does not impact conveyances of the 100-year flood event or cause impacts to the regulated floodplain.

The project has been cast by using the river corridor, floodplain and to some extent existing channels and storm or flood works constructed by the Flood Control District, the City of Tucson or drainage ways constructed for various transportation projects including surface roads and Interstate 19, to handle the flood and storm discharges and conduct these flows into the Santa Cruz River and the West Branch of the Santa Cruz River. The effect of the floodway and floodplain and the pre-existing projects for flood control and storm waters are factors that need to be considered in evaluating the fair market value of such lands.

Although navigation per se is not considered here, the use of the river and floodplain for flood control and flood damage reduction may be a consideration over the use, future development and highest and best use of these lands.

9. Description of Lands:

a. General Description:

The proposed project area is 1,223 acres located in and around the Santa Cruz and West Branch of the Santa Cruz Rivers 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 and West Branch Santa Cruz Rivers and tributaries.

10. Project Maps:

Project maps are included in the main Feasibility report and/or attached to this Real Estate Plan as accompanying exhibits at the end of this report. Maps of known landfills and/or HTRW sites can be found in Exhibits 2 and 3 of Appendix G, Phase I Site Assessment of the Feasibility Report.

11. Crediting for LERRD’s:

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

Credit will only be applied to the acreage within the “project footprint”, namely the lands or corridor required for the Recommended Plan of improvements to be included in the Federal/Local Sponsor environmental 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 to be included in the project have been included.

Corps policy prescribes that credit will not be 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:

No information has been provided to date by plan formulation regarding the necessity for any facility relocations in the project area. Further engineering and design work will 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 environmental restoration, riparian habitat and similar benefits, the approach taken during feasibility is to leave utilities, river and bridge crossings and infrastructure in place, and that the engineering and design for riparian restoration will “work around” and consider the constraints of all existing infrastructure. The project is aimed at producing the maximum outputs for restoration and wished to minimize or avoid altogether 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. Estates- Recommended Permanent Easement Estate:

The recommended estates for environmental restoration are fee simple title or fee dedicated right-of-way. Pima County Transportation and Flood Control District (NFS) or the City of Tucson will have fee simple title over their respective lands used for the project. Pima County Transportation and Flood Control District is the single accountable Non-Federal sponsor for this project and will be the anticipated signatory to the PCA. It is anticipated that Pima County will enter into some intergovernmental agreement with the City of Tucson in order to undertake this project. Where the City of Tucson holds permanent fee simple title, such as to a drainage way or channel works, transportation project, or similar feature, it is recommended for this project that the City grant or dedicate a perpetual easement to Pima County Dept. of Transportation and Flood Control District for purposes of constructing, operating, maintaining, repair and replacement of the Paseo De Iglesias project as authorized by Congress. A recommended permanent easement estate is provided below and is based on paraphrasing applicable portions of the standard easement estates in Chapter 5 of ER 405-1-12. This is the recommended estate to be acquired on City of Tucson and other Governmental owned lands and features. This estate is submitted with this feasibility report for approval. (ER 405-1-12 Chapter 12 Para 12-9 c).

CHANNEL IMPROVEMENTS FOR ENVIRONMENTAL RESTORATION EASEMENT

A perpetual and assignable right and easement, to construct operate, and maintain works and measures for channel improvement and environmental restoration and incidental recreation, on, over and across the land described in Schedule A, for the purposes of constructing the Santa Cruz River, Paseo de las Iglesias Environmental Restoration Project, Pima County Arizona, as authorized by the Act of Congress approved _____, Water Resources Development Act of _____ and the attendant Chiefs of Engineer's Report cited therein, and for other purposes as may be required in connection with said project and the authorized plan of improvement; reserving however to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby

acquired; subject however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

The use of a perpetual easement from City of Tucson to the Non Federal sponsor, Pima County TFCD is recommended to have a single NFS named and accountable for fulfilling the NFS's obligations in the PCA. With so much of the land owned by City of Tucson this is the recommended approach concerning sponsorship and the fulfillment of LERRD acquisition responsibilities on this project.

A permanent easement is also the recommended estate for any State owned lands that may be included in the project area. At present on Parcel (APN 138-01-006C) located along a side drainage way entering the Santa Cruz just north of Valencia Road is located within the project area. The State of Arizona will only convey a permanent easement to city or county governments of lesser sovereignty. Fee title is only conveyed by the State by a public auction process and the sponsor would have no guarantee of acquiring the property via public auction. Thus we are recommending a permanent easement in the case of State owned lands.

If the permanent easement estate on State owned lands is not approved, and if the NFS is not able to obtain a sufficient estate from the State of Arizona before project implementation, (2007-2008 timeframe), then it is then recommended that the 14 acres of State of Arizona Land be eliminated from the project. This would still leave 1209 acres available for environmental restoration and would not materially affect the desired outcome and objectives.

15. Construction Induced Flooding:

This river is ephemeral and dry. Appropriate measures will be taken for the care and diversion of water, if any, during construction. There will 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.

It is noted that the adoption of a permanent easement estate could significantly reduce this baseline estimate and as stated actual LERRD crediting should a project be authorized will 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. Particularly, given the fact that approximately half of the project acreage is already 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 Pima County Department of Transportation 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 will 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:

As part of preparing this report the Geotechnical sections of the Main report and the Technical Appendix has been reviewed for analysis as to 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. These are some highlighted portions of the Geotechnical discussion of hazardous waste In Section IV of the main report.

Seven 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 study area, as distinct from the selected 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 and Geotechnical assessment of the project locations, 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 is 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 environmental 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 how the landowners will be affected. A large percentage of the land needed for the project is already owned by the City of Tucson.

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. Comments and clarifications resulting from Alternative Formulation Briefing and the Internal Technical review and other review conducted to date (June 2004) have been incorporated into this report.