

## **APPENDIX A**





**PIMA COUNTY**  
**DEPARTMENT OF TRANSPORTATION AND FLOOD CONTROL DISTRICT**  
201 NORTH STONE AVENUE, FOURTH FLOOR  
TUCSON, ARIZONA 85701-1207

KURT WEINRICH, P. E.  
DIRECTOR

August 13, 2002

(520) 740-6410  
FAX (520) 620-1933

Colonel Richard G. Thompson  
District Engineer  
United States Army Corps of Engineers  
Los Angeles District  
911 Wilshire Blvd.  
Los Angeles, CA 90017

Re: Tanque Verde Creek Project

Dear Colonel Thompson:

Pima County Flood Control District hereby confirms its support for the construction of the Tanque Verde Creek, Craycroft to Sabino Canyon Project. Bank stabilization and environmental restoration along the Tanque Verde project reach would be of great benefit to the County and community. We understand the cost sharing requirement for the construction of the project: 65% by the Federal government and 35% by the local sponsor. Pima County Flood Control District would provide the necessary funding through flood control levy funds.

We appreciate the cooperation and support you have provided for this and other projects in Pima County and look forward to successful completion of this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Suzanne Shields".

Suzanne Shields  
Deputy Director, Flood Control

c: Kurt Weinrich, Director  
Leo Smith, Division Manager  
Larry Robison, Design Manager

Floodplain Management Division ● Telephone: (520) 740-6350 ● Fax: (520) 740-6749  
Planning ● Management

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DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
P. O. Box 532711  
LOS ANGELES, CALIFORNIA 90053-2325

July 2, 1999

REPLY TO  
ATTENTION OF:

Office of the Chief  
Plan Formulation Branch

Mr. Brooks Keenan  
Director  
Pima County Flood Control District  
210 North Stone Avenue  
Tucson, Arizona 85701

Dear Mr. Keenan:

I am pleased to inform you that the Pima County Department of Transportation and Flood Control District's request for a potential credit under Section 104 of WRDA 1986 regarding construction of soil-cement bank protection along the south bank of the Tanque Verde Creek has been approved.

As you may be aware, this is a conditional approval and is not an assurance that specific credit will be given against the non-Federal share of the flood damage reduction project. The final approval and credit determination will be subject to the results of the Limited Reevaluation Report (LRR), Administration review and approval, project authorization and other requirements of Section 104 of WRDA 1986. Also, it is important to note that while the Corps may recommend the overall project as a flood damage reduction project, the Office of Management and Budget has historically considered this type of project as bank erosion protection, and not the responsibility of the Corps. Thus, this conditional approval should not be interpreted as a commitment to recommend the project for authorization, or for reimbursement if a Federal project is not undertaken.

The preparation of the LRR was initially scheduled for completion in June 1999. Several issues have arisen creating the necessity to extend that schedule. These issues include a delay in acquiring access to private properties in order to perform the endangered species survey and the discovery of a significant cultural resource site within the project area. This site requires extended coordination with the resources agencies. In light of the above we are extending the completion of the LRR and the environmental document to January 2000.

Please contact me at (213) 452-3964 or have your Staff call me or Mr. Dan Young at (213) 452-3794 for any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "John P. Carroll".

John P. Carroll  
Colonel, Corps of Engineers  
District Engineer





DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108

7 JUN 1999

REPLY TO  
ATTENTION OF

MEMORANDUM FOR THE DIRECTOR OF CIVIL WORKS

SUBJECT: Tanque Verda Creek, Arizona – Section 104 Credit

This is in response to your April 14, 1999, memorandum requesting approval of the Pima County Department of Transportation and Flood Control District's application for credit for implementing flood damage reduction measures pursuant to Section 104 of the Water Resources Development Act (WRDA) of 1986.

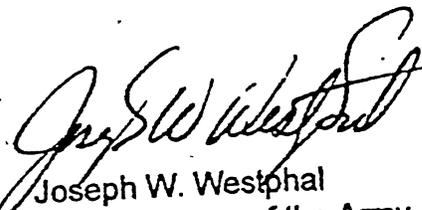
The Pima County Department of Transportation and Flood Control District's application is dated June 5, 1998. The South Pacific Division and Los Angeles District have reviewed the application and certify that the proposed work meets the requirements for application for a credit under Section 104 of WRDA 1986. The application is for a credit to construct approximately 4,000 linear feet of soil cement bank protection along the south or left bank of the Tanque Verde Creek. We understand that Pima County plans to initiate this work prior to the completion of the Corps Limited Reevaluation Report (LRR) which will be used to seek authorization of a larger project along Tanque Verde Creek. The Los Angeles District estimates that the cost of the work for which the credit has been requested is about \$1,300,000. Your April 14, 1999, memorandum indicates that the Corps has determined that the work is separately useful for flood damage reduction, integral to the plan that may be proposed in the LRR, economically justified, environmentally acceptable, and urgently needed. We also understand that the final LRR is scheduled to be completed by the Los Angeles District in June 1999.

The Pima County Department of Transportation and Flood Control District's request for a potential credit is approved. This conditional approval should not be interpreted as an assurance regarding later approval of a specific credit against the non-Federal share of an authorized flood damage reduction project. Final approval and credit determination will be subject to the results of the LRR, Administration review and approval, project authorization, and other requirements of Section 104 of WRDA 1986.

CEW-FW

-2-

Upon notification of this approval, the Los Angeles District Engineer should notify Pima County of the conditions upon which this conditional approval is being made. While we realize that the Corps may recommend the overall project as a flood damage reduction project, the Office of Management and Budget has historically considered projects of this type as bank erosion protection, and not the responsibility of the Corps. Thus, one of the conditions that should be specifically noted to the sponsor is that this conditional approval should not be interpreted as a commitment to recommend the project for authorization, or for reimbursement if a Federal project is not undertaken.



Joseph W. Westphal  
Assistant Secretary of the Army  
(Civil Works)

CESPD-ET-P (CESPL-PD-WA/4 Feb 99) (1105) 1st End Mr. Frentzen/415-977-8164  
SUBJECT: Application for Consideration of Section 104 Credit, Tanque Verde Creek Project, AZ

DA, South Pacific Division, Corps of Engineers, 333 Market Street, Room 923  
San Francisco, CA 94105-2195

**17 FEB 1999**

FOR CDR HQUSACE, CECW-PE, 20 Mass. Ave., NW., Wash, DC 20314-1000

CDF/tjm  
CESPD-ET-P  
enrillito  
7-8164  
10 Feb 99

1. The Los Angeles District is preparing the final Limited Reevaluation Report (LRR) for Tanque Verde Creek in accordance with the requirements set forth in 1998 Appropriations Act language. The act language directs the Corps of Engineers to accomplish the LRR for Tanque Verde Creek, within the area encompassed by the Rillito River Project.

JWWB  
CESPD-ET-P

2. Previous correspondence between this office and HQUSACE has led to the finding that the decision document (LRR) for Tanque Verde Creek will require Congressional Authorization.

JEF  
CESPD-ET-E

3. The Section 104 Credit request for Tanque Verde Creek has been prepared at the request of the Pima County Flood Control District (non-Federal local sponsor) consistent with Corps of Engineers Regulations (ER 1165-2-29). The proposed work by the local sponsor is separately useful for flood damage reduction, compatible with the Federal Plan, economically and environmentally feasible, and urgently required to mitigate flood damages.

DPD  
CESPD-ET-R

4. Accordingly, I concur with the District Engineer's recommendation to approve Pima County's request for Section 104 Credit for their construction work on Tanque Verde Creek.

SLS  
CESPD-ET

WRD  
CESPD-PM

Encl  
nc

PETER T. MADSEN  
COL (P), EN  
Commanding

FR  
CESPD-XA

PAT  
CESPD-DD

CF:  
CESPL-PM  
CESPL-PD  
CESPD-PM  
CESPD-ET-E  
CESPD-ET-R  
CESPD-OC  
CESPD-ET-P  
CESPD-ET-P rf

PTM  
CESPD-DE





DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
P. O. Box 532711  
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO  
ATTENTION OF:

CESPL-PD-WA (1105-2-10a)

4 February 1999

MEMORANDUM FOR Commander, South Pacific Division, ATTN: CESPD-ET-P (Frentzen)

SUBJECT: Application for Consideration of Section 104 Credit, Tanque Verde Creek Project, AZ

1. The enclosed letter from the Pima County, Department of Transportation and Flood Control District, dated 5 June 1998, requests that consideration for credit under Section 104 of Public Law 99-662 be approved. The Water Resources Development Act of 1986 provides a mechanism for the Department of the Army to determine whether work carried out by local interests is compatible with a project for flood control. It further gives the Secretary the authority to conditionally approve credit for the cost of said work to alleviate flood damages, while providing assurance that the local interests will not be adversely affecting the project's economic feasibility.
2. The following authorities and documents apply to this application:
  - a. Public Law 761, Seventy-fifth Congress, known Section 6 of the Flood Control Act of 1938. This act authorizes an examination of the flood potential for the Gila River and Tributaries, Arizona, area.
  - b. Water Resources Development Act of 1986, Section 601(b), which authorized a project for the Rillito River in the vicinity of Tucson, Arizona and stated that Section 104 of this act will apply to the project.
  - c. Energy and Water Development Appropriations Bill of 1998, Report 105-190, accompanying House Resolution 2203. This authorization directed the Corps of Engineers to accomplish a limited reevaluation report for Tanque Verde Creek, which is encompassed within the area of the authorized Rillito River Project.
  - d. Draft of the Limited Reevaluation Report (LRR) for Tanque Verde Creek, Pima County, Arizona, dated September 1998.
  - e. Section 104 Credit application, dated 5 June 1998 and amendment letter, dated 26 October 1998, both from the Pima County Flood Control District.
3. The LRR has been charged with determining the advisability of extending the bank

CESPL-PD-WA

SUBJECT: Application for Consideration of Section 104 Credit, Tanque Verde Creek Project,  
AZ

protection and related measures for that portion of Tanque Verde Creek immediately upstream of its confluence with Rillito Creek, between the Craycroft Road and Sabino Canyon Road Bridges. This area has been subject to severe flooding and resultant damages to public infrastructure and private property.

4. The proposed project as defined in the LRR, covers the river length between the Craycroft Road and the Sabino Canyon Road Bridges. It will include the construction of approximately 7,049 feet of soil cement bank protection in two existing gaps of the bank protection along the south bank of the creek, and approximately 1,549 feet of the bank protection along the north bank of the creek. In addition, the length of the creek along the north side that has no bank protection will either be left in its existing condition, or if it is determined that the Corps project will induce damages along this reach, then, this property will either be protected or be acquired.

5. Pima County has awarded a contract for the design of a new 36-inch interceptor sewer line, which will be located along the south side of Tanque Verde Creek. It will parallel the creek between Craycroft Road and the Tucson Country Club located upstream of the road. If Pima County has the opportunity to receive Section 104 credit for bank stabilization in conformity with the Rillito River project and the LRR for Tanque Verde Creek, they estimate that this segment of the Rillito Creek project will remove the need to budget and fund a project for bank stabilization in this immediate area.

6. It is their desire to provide flood protection now to prevent recurring, substantial flood and erosion damages to private properties and infrastructures and protect the interceptor sewer line discussed in 5. above. In addition, significant benefits result from preventing recurring substantial flood and erosion damages to private properties and public infrastructure in this area. The largest flood on record (24,500 cfs) occurred in January 1993, causing extensive erosion along both the north and south banks in this area.

7. Pima County has specified that the Section 104 credit be applied to the work that will be performed to build the portion of the Corps project along the south side, beginning from the existing bank protection west of Sabino Canyon Road to the existing bank protection at the downstream end (gap on the upstream end of the south bank). This would include approximately 4000 LF of soil-cement bank protection. According to the draft LRR the cost to construct this feature would be approximately \$1.3 Million.

8. According to the draft LRR, the estimated cost of the project is \$2,850,477, with an annual cost for operations and maintenance projected at \$17,900. The with-project economic analysis indicates a national economic development (NED) annual cost of \$235,186 with related benefits of \$697,702. This translates into net benefits of \$462,516 and a benefit/cost ratio of 2.97.

CESPL-PD-WA

SUBJECT: Application for Consideration of Section 104 Credit, Tanque Verde Creek Project

9. Pima County's letter of request states that their project cost estimate is estimated at \$3,500,000. Based on the scope of the application made by Pima County, we have been able to evaluate its relationship to the Federal plan and believe many aspects of their project are in line with the LRR and the overall Rillito Creek Project as authorized by Congress.
10. Major cost variations between the LRR project and Pima County projects are illustrated in Table 1. The resolution of these differences and the true costs eligible for Section 104 credit will be accomplished when detailed plans are developed by Pima County and reviewed by this District.
11. Since the subject work would be constructed by Pima County Flood Control District, a Section 404 regulatory Permit is assumed to be required under the Clean Water Act. The work would also require NEPA documentation. If an individual Section 404 Permit is required, NEPA documentation would be required as part of the permit process. If the work is determined to be exempt from individual Section 404 permit requirements, it will still be subject to NEPA requirements to be eligible for credit under a Federal program. This work would also be subject to the Endangered Species Act and the National Historic Preservation Act requirements.
12. Although the Environmental Assessment as part of the current Corps study has not been completed to date, preliminary Corps assessment indicates that the proposed work for this project reach will have no significant environmental impacts.
13. The environmental document is currently scheduled to be completed in March 1999 and the final LRR would be ready in June 1999. The schedule could potentially be impacted by the delay being experienced in acquiring the rights-of-entry in order to perform the Endangered Species survey, which must be performed during a specific window. Pima County is actively pursuing the remaining rights-of-entry.
14. I recommend that the Assistant Secretary of the Army (Civil Works) approve Pima County's request for consideration of Section 104 credit for their proposed construction work. Please approve our recommendation and forward it on to headquarters with your concurrence at your earliest convenience.
15. Enclosed with this forwarding letter are copies of the application letter and its associated attachments for your review. The Los Angeles District will notify Pima County if and when approval is granted. Actual approval of credit will follow upon Congressional authorization of the project.

Encls

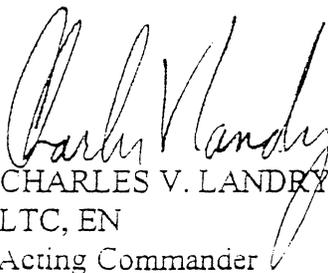
  
CHARLES V. LANDRY  
LTC, EN  
Acting Commander

TABLE 1

ITEM	ENTITY	QUANTITY	UNIT COST	COST
Drainage Excavation	LRR	13,300 cy	\$3	\$39,900
	Pima County	116,000 cy	\$2	\$232,000
Compacted Fill	LRR	29,000 cy	\$7	\$188,500
	Pima County	0 cy		\$0
Sewer Relocation	LRR	0		\$0
	Pima County			\$152,000
Soil Cement Bank Protection	LRR	40,500 cy	\$9	\$364,500
	Pima County	49,000 cy	\$8	\$392,000
Contingencies (20%)				
<i>(Mobilization is line item)</i>	LRR			\$298,720
<i>(Mobilization is % of subtotal)</i>	Pima County			\$321,900
Right-of-way	LRR			\$628,000
	Pima County			\$1,120,000
TOTALS FOR INDIVIDUAL PROJECTS	LRR			\$2,850,477
	Pima County			\$3,456,994



PIMA COUNTY  
DEPARTMENT OF TRANSPORTATION AND FLOOD CONTROL DISTRICT  
201 NORTH STONE AVENUE, THIRD FLOOR  
TUCSON, ARIZONA 85701-1207

BROOKS A. KEENAN, P.E.  
DIRECTOR

(520) 740-6410  
FAX (520) 620-1933

October 26, 1998

Mr. Eshan Eshraghi  
Project Manager  
U.S. Army Corps of Engineers  
Los Angeles District  
911 Wilshire Blvd.  
Los Angeles, CA 90017

Subject: Tanque Verde Creek Project - Section 104 Credit

Dear Mr. Eshraghi:

We submitted a Section 104 Credit Application for the Tanque Verde Creek Project on June 5, 1998. The project feature included in the Section 104 Credit application consists of approximately 4000 feet of soil cement bank protection on the southbank, extending from the end of the existing bank protection west of Sabino Canyon Road to the existing bank protection at the downstream end.

If there are any questions regarding this matter, please call me at (520) 740-6378.

Sincerely,

A handwritten signature in black ink, appearing to read "Zbig Osmolski", with a long horizontal flourish extending to the right.

Zbig Osmolski, Manager  
Flood Control Engineering

c: Brooks A. Keenan





DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers  
WASHINGTON, D.C. 20314-1000

18 SEP 1998

REPLY TO  
ATTENTION OF:

Planning Division  
East-West Planning Management Branch

Honorable Ed Pastor  
House of Representatives  
Washington, DC 20515-0302

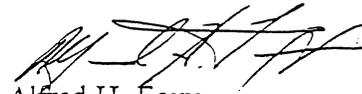
Dear Mr. Pastor:

This is in response to your letter of August 27, 1998, to Lieutenant General Joe N. Ballard, Chief of Engineers, regarding the status of Pima County's request for credit, pursuant to Section 104 of Public Law 99-662, for the design and construction of the flood damage reduction improvements along Tanque Verde Creek in Tucson, Arizona.

The U.S. Army Corps of Engineers Los Angeles District has received an inquiry from Pima County regarding section 104 credit on the proposed Tanque Verde Creek project. In response to this inquiry a meeting will be held in Phoenix, Arizona, on October 1, 1998, between the Pima County Flood Control District and the Corps to clarify the requirements and identify the most expeditious facilitation of the request. This meeting will be attended by representatives from the Corps Headquarters staff.

We recognize the urgency of Pima County's request and will work with Pima County to process their application for credit in an expeditious manner. I have asked Colonel Robert L. Davis, Los Angeles District Engineer, to advise you of the results of the meeting and to keep you apprised of the status of this action.

Sincerely,

  
Alfred H. Foxx  
Colonel, U.S. Army  
Assistant Director of Civil Works,  
Pacific Region





PIMA COUNTY  
DEPARTMENT OF TRANSPORTATION AND FLOOD CONTROL DISTRICT  
201 NORTH STONE AVENUE, THIRD FLOOR  
TUCSON, ARIZONA 85701-1207

BROOKS A. KEENAN, P.E.  
DIRECTOR

(520) 740-6410  
FAX (520) 620-1933

June 5, 1998

*Rec'd  
6/10/98*

Colonel Robert L. Davis  
District Engineer  
U.S. Army Corps of Engineers  
Los Angeles District  
911 Wilshire Blvd.  
Los Angeles, CA 90017

Subject: Tanque Verde Creek Project, Craycroft Road to Sabino Canyon Road  
Section 104 Credit Application

Dear Colonel Davis:

The Corps of Engineers is currently preparing the Limited Reevaluation Report (LRR) for the Tanque Verde Creek Project (Craycroft Road to Sabino Canyon Road). The LRR is being prepared on the basis of the Corps' original (1987) report "Survey Report and Environmental Assessment for the Rillito River and Associated Streams" which investigated flooding problems on the Rillito River and its major tributaries, including the Tanque Verde Creek.

We understand that this evaluation process by the Corps and the subsequent procedures will take some time for completion. However, in the interest of public need and welfare, implementation of this project is urgently needed in order to prevent recurring substantial flood and erosion damages to private properties and public infrastructures located along the river reach. Additional factors which make the early implementation of this project even more important are as follows. Construction of the interceptor sewer line to be located along this river reach was approved in the Bond election held in May 1997. As this interceptor line is a critical segment of the sewer network, the Wastewater Department (WWD), one of the public works departments of Pima County, initiated engineering design of the sewer line, which will be completed in nine to twelve months to be followed by construction bid. Construction of the interceptor sewer line will require the simultaneous installation of bank protection or comparable interim measures for protection against flood/erosion hazards. Separate implementation of these two elements (sewer line and bank protection) will result in additional cost compared to combining them and the residents in the neighborhood will experience twice the inconvenience/disruption due to construction activities.

*LEACI*

Page 2

Colonel Robert L. Davis

June 5, 1998

In view of the preceding considerations, the Pima County Flood Control District hereby requests credit under Section 104 of Public Law 99-662 for design and construction of the Tanque Verde Creek bank protection project. The proposed plan for which credit is being sought consists of soil cement bank protection along both banks of the river reach and a 500-foot width buffer area for riparian reserve along the north bank. The total cost for the project is estimated as \$3.5 million. Project description, cost estimate, and preliminary plans and profiles are given in the attached documents.

Pima County Flood Control District, as the local sponsor, is familiar with cost sharing and the Section 104 requirements. Pima County Flood Control District successfully completed (in 1996) construction of the Randolph South detention basin under Section 104 credit as part of the ongoing Tucson Drainage Area Project. We are familiar with the federal standards and requirements for design, and plans and specifications will be prepared accordingly.

Pima County Flood Control District requests favorable consideration and quick approval of the Section 104 credit for the project, which will provide critical flood/erosion protection and environmental benefits to the community. We value and appreciate your active cooperation in many Pima County projects and believe that this project will represent another successful example of our cooperative efforts.

Sincerely,



Brooks A. Keenan  
Director

xc: Charles H. Huckelberry, County Administrator  
George Brinsko, Director, Wastewater Department

## ATTACHMENT 1

### Tanque Verde Creek Project

#### Project Description

The proposed project consists of constructing soil cement bank protection along the Tanque Verde Creek between Craycroft Road and Sabino Canyon Road. Project features also include purchase of lands along the northern bank of the Creek to establish a riparian/floodplain mitigation area. The Corps of Engineers' original (1987) report "Survey Report and Environmental Assessment for the Rillito River and Associated Streams" investigated flooding problems on the Rillito River and some of its tributaries, including the Tanque Verde Creek. Project development for the Tanque Verde Creek was not included due to lack of economic justification at that time. Since then, several floods have occurred and caused substantial damages to private properties, public infrastructure and existing riparian areas along the Tanque Verde Creek, especially within the reach between Craycroft Road and Sabino Canyon Road. The January 1993 Flood (peak discharge of 24,500 cfs, compared to 100-year discharge of 28,000 cfs) caused significant lateral bank erosion (up to 100 feet) along this Tanque Verde reach and exposed an existing 8" sanitary sewer line on the south bank of the creek. Severe bank erosion (up to 140 feet) occurred on the north bank of the creek and exposed the bridge caissons under the north abutment of the Craycroft Road bridge.

In addition to these recent damages, there is a significant potential for future damages due to the existence of an old meander bend near the Craycroft bridge. Flood flows and subsurface flows follow this meander and have resulted in undermining of the roadway embankment, requiring periodic repair of the road surface and shoring up of an interceptor sewer line. A major flood could undermine and break through the embankment, washing out the roadway and the sewer interceptor and causing inundation and erosion damages to a number of subdivisions located within the meander. Bank stabilization of this river reach and riparian area preserve, as included in the proposed project, are required to prevent substantial damages that occurred during the recent 1993 flood and even more catastrophic flooding and erosion damages that may occur in the event of larger floods in the future.

Proposed project features include : (1) 1700 feet of bank protection on the north bank; (2) Soil cement bank protection between the two large gaps of existing bank protection on the south bank; and (3) 500-foot width buffer area for riparian habitat along the north bank. Cost estimate for the project is \$3.5 million, as summarized in Attachment 2. Project location map and plans and profiles are included in the attached documents.

ATTACHMENT 2

Tanque Verde Creek Project

Project Cost Estimate

Item	Units	Quality	Unit Cost	Cost
Clearing & Grubbing	L.S.	1	\$20,000.00	\$20,000.00
Removal of Structures & Obstructions	L.S.	1	\$20,000.00	\$20,000.00
Mobilization	L.S.	1	\$50,000.00	\$50,000.00
Diversion and Control of Water	L.S.	1	\$20,000.00	\$20,000.00
Drainage Excavation	C.Y.	116,000	\$2.00	\$232,000.00
Sewer Relocation	L.S.	1	\$152,500.00	\$152,500.00
Soil Cement Bank Protection	C.Y.	49,000	\$8.00	\$392,000.00
Stabilizer for Soil Cement	Ton	8,000	\$80.00	\$640,000.00
Safety Hand Rail	L.F.	8,300	\$10.00	\$83,000.00
Subtotal				\$1,609,500.00
Contingency (20% of subtotal)			\$321,900.00	\$321,900.00
Total Construction Cost				\$1,931,400.00
Engineering Design (6%)			\$115,884.00	\$115,884.00
Construction Admin. & Field Inspect. (15%)			\$289,710.00	\$289,710.00
Right of Way			\$1,120,000.00	\$1,120,000.00
<b>TOTAL PROJECT COST</b>				<b>\$3,456,994.00</b>

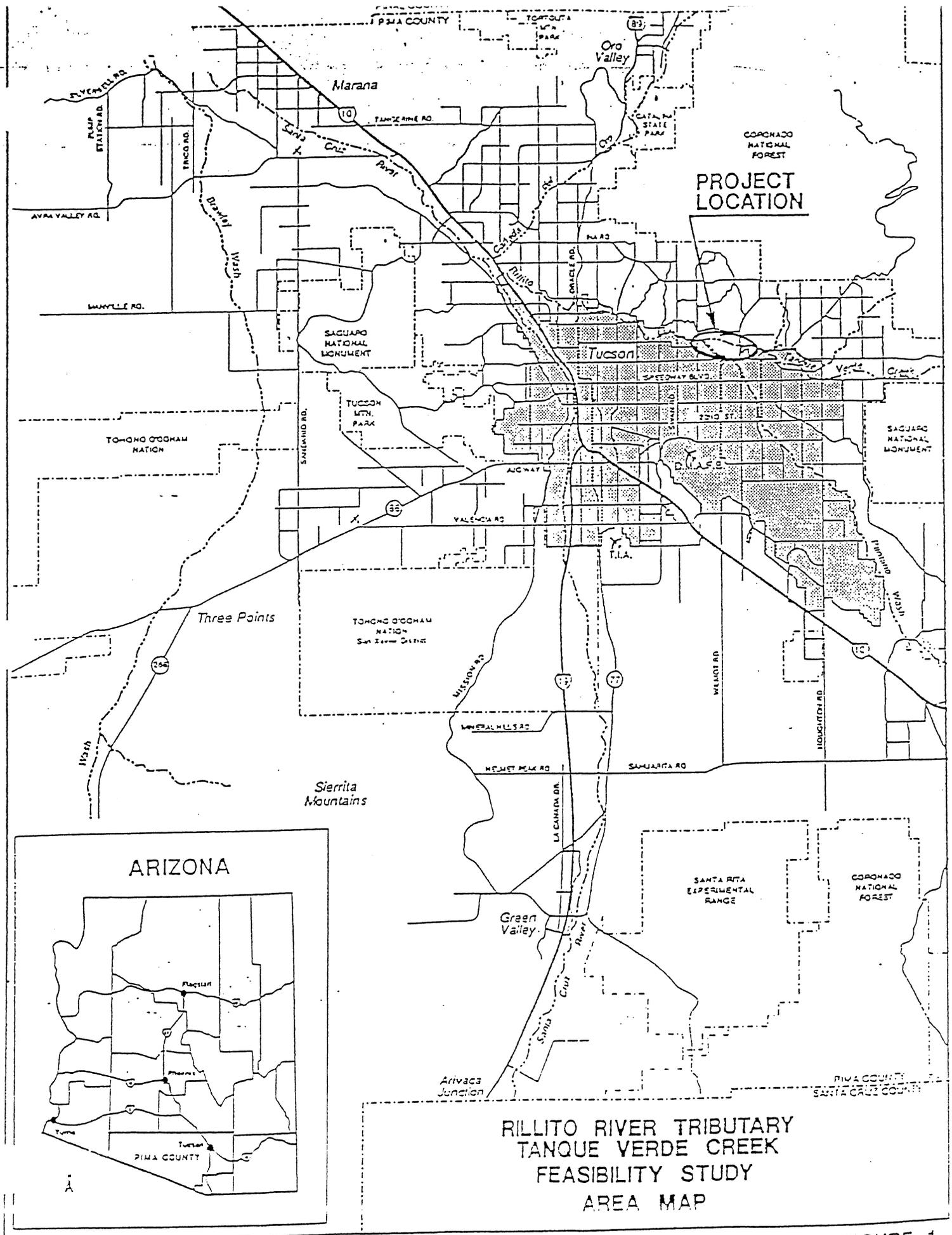
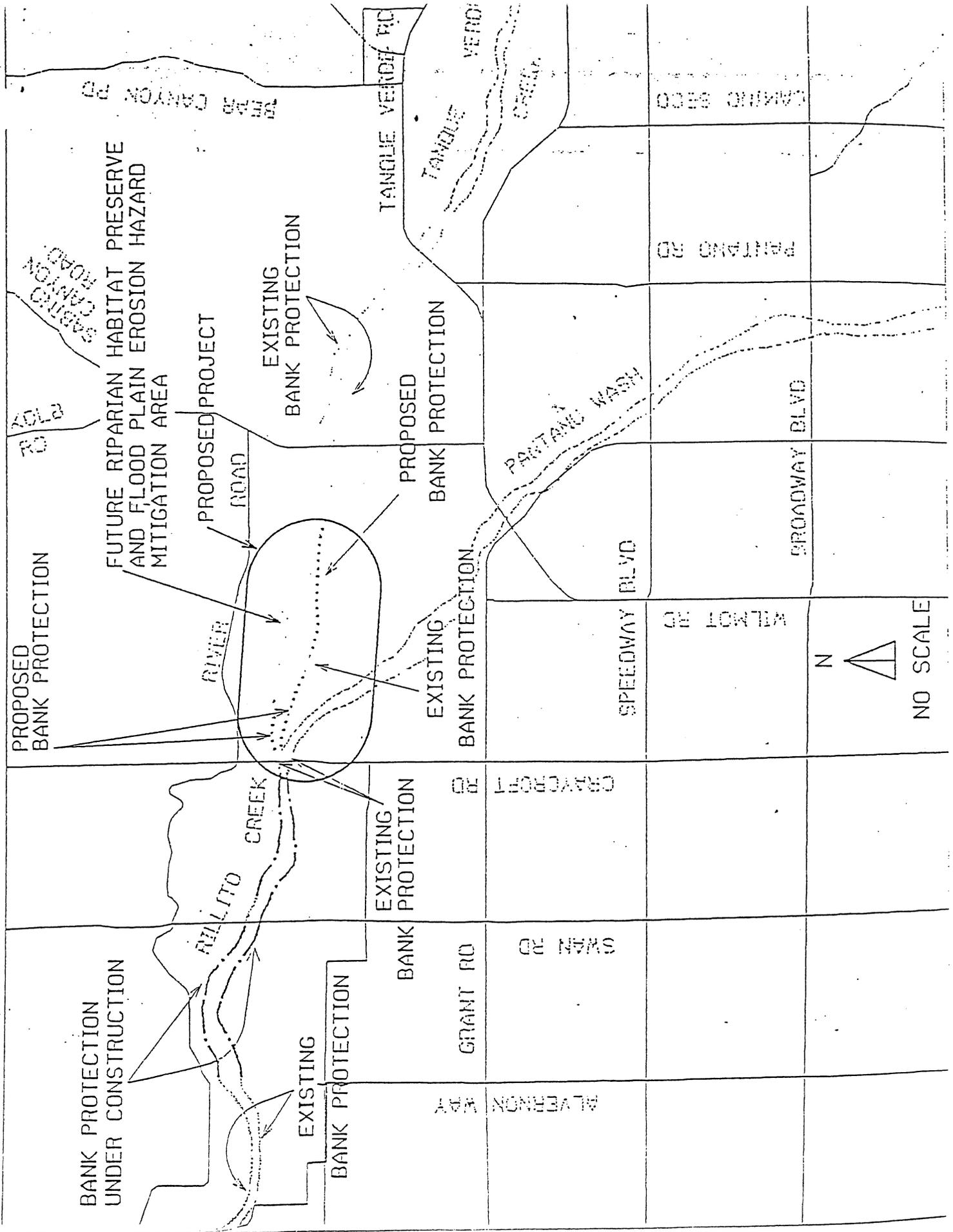


FIGURE 1



BANK PROTECTION UNDER CONSTRUCTION

FUTURE RIPARIAN HABITAT PRESERVE AND FLOOD PLAIN EROSION HAZARD MITIGATION AREA

MILLITO CREEK

RIVER

PROPOSED PROJECT ROAD

EXISTING BANK PROTECTION

PROPOSED BANK PROTECTION

EXISTING BANK PROTECTION

ALVERNON WAY

GRANT RD

EXISTING BANK PROTECTION

GRAYPORT RD

OR

SPEEDWAY BLVD

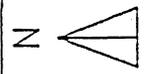
OR

PANTANO WASH

BROADWAY BLVD

PANTANO RD

CAMINO SECO



NO SCALE

SARTON CANYON ROAD

7012a

PROPOSED BANK PROTECTION

TANGLE VERDOL RD

TANGLE VERDOL CREEK