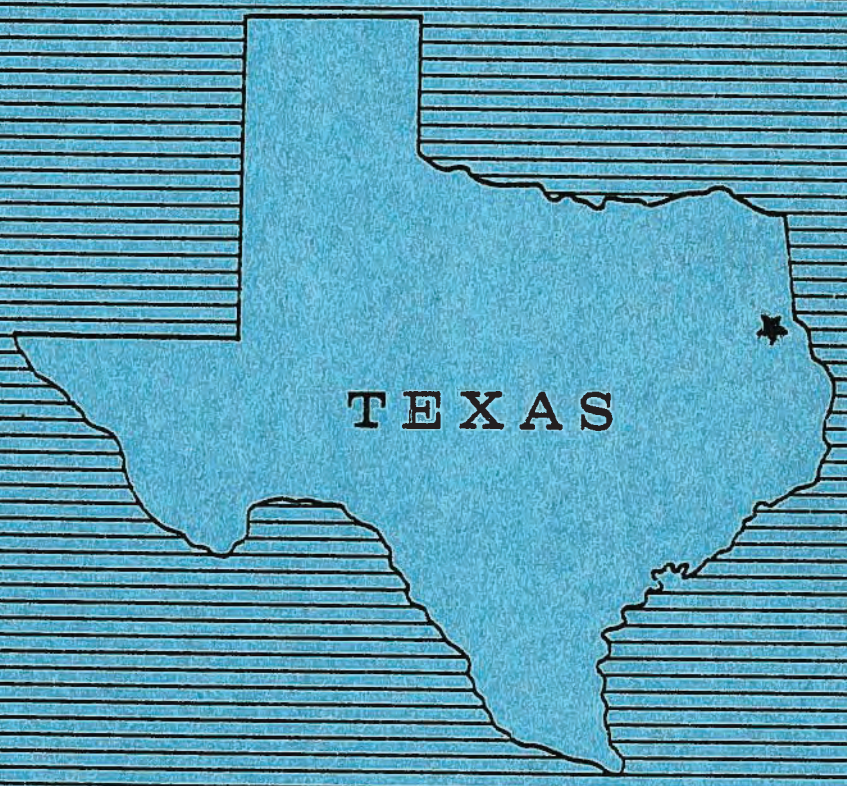
SUPPLEMENTAL WATERSHED PLAN NO. IV
FOR WATERSHED PROTECTION AND FLOOD PREVENTION

ATTOYAC BAYOU WATERSHED

NACOGDOCHES, RUSK, SHELBY AND SAN AUGUSTINE COUNTIES, TEXAS



SUPPLEMENTAL

WATERSHED PLAN NO. IV

ATTOYAC BAYOU WATERSHED
Nacogdoches, Rusk, Shelby, and San Augustine Counties, Texas

Prepared Under the Authority of the Watershed Protection and Flood Prevention Act, (Public Law 83-566, as amended (16 USC 1001-1008).

Prepared by:

Attoyac Bayou Watershed Authority

Nacogdoches County Commissioners Court

Rusk County Commissioners Court

Shelby County Commissioners Court

Nacogdoches Soil and Water Conservation District

Rusk Soil and Water Conservation District

Shelby Soil and Water Conservation District

Piney Woods Soil and Water Conservation District

U. S. Department of Agriculture, Soil Conservation Service

U. S. Department of Agriculture, Forest Service

OCTOBER 1980

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SUPPLEMENTAL WATERSHED PLAN AGREEMENT NO. IV

Between the

Attoyac Bayou Watershed Authority
Local Organization

Nacogdoches County Commissioners Court
Local Organization

Rusk County Commissioners Court
Local Organization

Shelby County Commissioners Court
Local Organization

Nacogdoches Soil and Water Conservation District
Local Organization

Rusk Soil and Water Conservation District
Local Organization

Shelby Soil and Water Conservation District
Local Organization

Piney Woods Soil and Water Conservation District
Local Organization

(hereinafter referred to as the Sponsors)

State of Texas

and the

Soil Conservation Service
United States Department of Agriculture
(hereinafter referred to as the SCS)

Whereas, the Watershed Plan Agreement for the Attoyac Bayou Watershed, State of Texas, executed by the Sponsors named therein and the SCS, becomes effective on the 14th day of July 1965; and

Whereas, the Supplemental Watershed Plan Agreement for said watershed, executed by the Sponsors named therein and the SCS, become effective on the 30th day of August 1971; and

Whereas, the Supplemental Watershed Plan Agreement No. II for said watershed, executed by the Sponsors named therein and the SCS, became effective on the 15th day of May 1972; and

Whereas, the Supplemental Watershed Plan Agreement No. III for said watershed, executed by the Sponsors named therein and the SCS, become effective on the 5th day of December 1972; and

Whereas, in order to carry out the Watershed Plan, as supplemented, for said watershed, it has become necessary to modify said Watershed Plan Agreement, as supplemented; and

Whereas, it has become necessary to modify the Watershed Plan, as supplemented; by deleting multiple-purpose structure No. 16, floodwater retarding structure Nos. 1, 4, 6, 10, 13, 14, 17, and 19, and 49.0 miles of channel work; and

Whereas, the City of Center is deleted as a Sponsor; and

Whereas, a Supplemental Watershed Plan No. IV which modifies the Watershed Plan dated May 1964, as supplemented, for said watershed has been developed through the cooperative efforts of the Sponsors and the SCS; which plan is annexed to and made a part of this agreement; and

Now, therefore, the Sponsors and the SCS hereby agree upon the following modifications of the terms, conditions, and stipulations of said Watershed Plan Agreement, as supplemented:

1. Paragraph numbered 1 is modified to read as follows:

The Sponsors will acquire such land rights as will be needed in connection with the works of improvement. The percentages of this cost to be borne by the Sponsors and the SCS are as follows:

Works of Improvement	Sponsors (percent)	SCS (percent)	Estimated Landrights Costs (dollars)
Multiple-Purpose Structure No. 23 and Basic Recre-ational Facilities			
Payment to land-owners for about 1,100 acres	50.00	50.00	396,000
Cost of Alteration or Modification of Improvements and Construction of access road	50.00	50.00	953,940
Legal Fees, Survey Costs, Flowage Ease-ments and othe	100.00	0	26,500
Floodwater Retarding Structures	100.00	0	84,300

2. Paragraph numbered 3 is modified to read as follows:

The percentage of construction costs to be paid by the Sponsors and by the SCS are as follows:

Works of Improvement	Sponsors (percent)	SCS (percent)	Estimated Construction Costs (dollars)
Multiple-Purpose Structure No. 23	27.40	72.60	966,950
Basic Recreational Facilities	50.00	50.00	526,320
Floodwater Retarding Structures	0	100.00	572,870

3. Paragraph numbered 4 is modified to read as follows:

The percentages of the engineering costs to be borne by the Sponsors and the SCS are as follows:

Works of Improvement	Sponsors (percent)	SCS (percent)	Estimated Engineering Costs (dollars)
Multiple-Purpose Structure No. 23	0	100.00	58,020
Basic Recreational Facilities	50.00	50.00	47,360
Floodwater Retarding Structures	0	100.00	58,170

4. Paragraph numbered 5 is modified to read as follows:

The Sponsors and SCS will each bear the cost of Project Administration which it incurs, estimated to be $41,000 and $269,060 respectively.

The Sponsors and the SCS further agree to all other terms conditions, and stipulations of said Watershed Plan Agreement, as supplemented, not modified herein.

Attovac Bayou Watershed Authority
Local Organization

By Gilmer Tyson

Title CHAIRMAN

Address RT. 2 CENTER 75935
Zip code

Date 1-6-81

The signing of this agreement was authorized by a resolution of the governing body of the Attovac Bayou Watershed Authority
Local Organization
adopted at a meeting held on 10-29-80

Merlin Adams
(Secretary, Local Organization)

Address Garrison, Tex 75946
Zip Code

Date 1-12-81

Nacogdoches County Commissioners Court
Local Organization

By [illegible]

Title County Judge

Address Nacogdoches Texas 75961
Zip Code

Date Dec. 10. 1980

The signing of this agreement was authorized by a resolution of the governing body of the Nacogdoches County Commissioners Court
Local Organization
adopted at a meeting held on Dec. 10. 1980

Hope Skipper
(Secretary, Local Organization)

Address Nacogdoches Texas 75961
Zip Code

Date Dec. 10. 1980

Rusk County Commissioners Court
Local Organization

By [illegible]

Title County Judge

Address Henderson, TX 7566
Zip code

Date 12-22-80

The signing of this agreement was authorized by a resolution of the governing body of the Rusk County Commissioners Court
Local Organization
adopted at a meeting held on December 8, 1980

Mrs Calvin H Barber
(Secretary, Local Organization)

Address Henderson, TX 7566
Zip Code

Date 12-22-80

Shelby County Commissioners Court
Local Organization

By [illegible]

Title County Judge

Address Center, Texas 75935
Zip Code

Date 1-5-81

The signing of this agreement was authorized by a resolution of the governing body of the Shelby County Commissioners Court
Local Organization
adopted at a meeting held on March 10, 1980

[illegible]
(Secretary, Local Organization)

Address P.O. Box 926 Center, Texas 75935
Zip Code

Date January 5, 1981

Nacogdoches Soil and Water Conservation District
Local Organization

By [illegible]

Title Chairman

Address 315 N. University Dr
Nacogdoches 75961
Zip code

Date 12/4/80

The signing of this agreement was authorized by a resolution of the governing body of the Nacogdoches Soil and Water Conservation District
Local Organization
adopted at a meeting held on Dec 4 1980

[illegible]
(Secretary, Local Organization)

Address Garrison, Tex 75946
Zip Code

Date 12/4/80

Rusk Soil and Water Conservation District
Local Organization

By [illegible]

Title Chairman

Address Route 4 Box 155 Henderson, Tex
Zip Code
75652

Date 12-25-80

The signing of this agreement was authorized by a resolution of the governing body of the Rusk Soil and Water Conservation District
Local Organization
adopted at a meeting held on

[illegible]
(Secretary, Local Organization)

Address Henderson Tx 75652
Zip Code

Date Dec 10, 1980

Shelby Soil and Water Conservation District
Local Organization

By _____

Title CHAIRMAN

Address 502 PINE ST. CENTER, TX. 75935
Zip Code

Date 1-8-81

The signing of this agreement was authorized by a resolution of the governing body of the Shelby Soil and Water Conservation District
Local Organization
adopted at a meeting held on NOV. 25, 1980

_____
(Secretary, Local Organization)

Address RT. 2 BOX 15 JOAQUIN, TX. 75954
Zip Code

Date 1-8-81

Piney Woods Soil and Water Conservation District
Local Organization

By _____

Title Chairman, Piney Woods RC Board, #429

Address 302 S. Clark St. San Augustine, Texas 75972
Zip Code

Date 12-12-1980

The signing of this agreement was authorized by a resolution of the governing body of the Piney Woods Soil and Water Conservation District
Local Organization
adopted at a meeting held on 12-9-80

_____
(Secretary, Local Organization)

Address 101 S. Bolivar San Augustine, Tx 75972
Zip Code

Date 12-12-80

Soil Conservation Service
United States Department of Agriculture

By _____
State Conservationist

Date JAN 22 1981

PREFACE

The supplemental watershed plan has been briefed to avoid excessive duplication with similar information presented in the Environmental Impact Statement. The Environmental Impact Statement should be reviewed for pertinent information regarding the planned project, environmental setting, water and related land resource problems, environmental impacts, project alternatives, and the irreversible and irretrievable commitment of resources.

SUPPLEMENTAL
WATERSHED PLAN NO. IV

ATTOYAC BAYOU WATERSHED
Nacogdoches, Rusk, Shelby and San Augustine Counties, Texas

October 1980

PURPOSE OF THE SUPPLEMENTAL WATERSHED PLAN

It has become necessary to modify the watershed plan, as supplemented, for Attoyac Bayou watershed in order to: delete multiple-purpose structure No. 16, 49.0 miles of channel work and floodwater retarding structure Nos. 1, 4, 6, 10, 13, 14, 17 and 19.

The City of Center installed a reservoir (Lake Pinkston) at the planned site of multiple-purpose structure No. 16 without PL-566 cost share assistance. The reservoir provides the municipal water which was to be provided by the planned multiple-purpose structure. The channel work is being deleted because of environmental concerns. The floodwater retarding structures were deleted from the plan because two project sponsors, Shelby and Rusk County Commissioners Courts, were unable to acquire the landrights needed for installation of remaining structural measures in their respective counties. Nacogdoches County Commissioners Court has expressed a desire to install the remaining measures, floodwater retarding structure No. 22 and multiple-purpose structure No. 23 on Naconiche Creek. Therefore, this supplemental watershed plan will only address the feasibility of installing the remaining measures on Naconiche Creek subwatershed which is an independent hydrologic unit.

The cost of the remaining structural measures is updated to current (1980) price levels. Structural measures constructed are actual cost. The damages and benefits for Naconiche Creek were updated to current levels (Current Normalized Prices, September 1979, for agricultural and current [1979] for nonagricultural, for remaining structural measures, and the appropriate price base in effect at the time of construction for structural measures that are built) to reaffirm economic feasibility.

The following are changes and modifications made in appropriate parts of the watershed plan, as supplemented.

PLANNED PROJECT

Structural Measures

The remaining project measures to be installed are floodwater retarding structure No. 22 and multiple-purpose structure No. 23 on Naconiche Creek subwatershed. They will be installed in accordance with the watershed work plan as supplemented. Two floodwater retarding structures have been built in this subwatershed.

In addition, the Sponsors will construct as a nonproject feature and without the use of PL-566 funds a low dam with conduits for water control to create a greentree reservoir. The reservoir will be installed concurrently with the installation of multiple-purpose structure No. 23. It will be located outside the project area on public land administered by the U. S. Forest Service. Sponsors will also acquire the landrights needed for a road and construct the road for public access to the reservoir and surrounding bottomland hardwoods area.

INSTALLATION COSTS - MONETARY

Tables 1, 2, 2A, and 4 provide updated costs for the project as supplemented.

ECONOMIC BENEFITS - NACONICHE CREEK SUBWATERSHED

The estimated average annual floodwater damages (Revised Table 5) after installation of the project, as supplemented, will be reduced from $140,160 to $100,660 a reduction of 28 percent. Crop and pasture damages will be reduced from $67,590 to $50,270 or 26 percent. Other agricultural damages, such as loss of fences, farm equipment, livestock, and other property, will be reduced from $30,990 to $21,330 or 31 percent. Non-agricultural damage to roads and bridges will be reduced from $28,840 to $19,980 or 31 percent. Indirect damage, such as interruption of travel, rerouting of school buses and mail routes, losses sustained by businessmen in the area and other similar losses, will be reduced from $12,740 to $9,080 or 29 percent.

It is estimated that benefits from more intensive use of flood plain lands will be $25,860 annually.

It is estimated that the installation of all planned recreational facilities will produce $220,500 in benefits annually.

The total estimated average annual benefits will amount to $285,860 (Revised Table 6) while the total annual costs amount to $176,740, resulting in a benefit-cost ratio of 1.6:1.0.

INSTALLATION AND FINANCING

The installation of structural measures will be carried out in accordance with provisions of the watershed plan, as supplemented.

The installation period for the remainder of this project is estimated to be two years. The following is the estimated schedule of obligations for the 2-year installation period:

Schedule of Obligations

Fiscal Year	Measures	Public Law 566 Funds (dollars)	Other Funds (dollars)	Total (dollars)
1st	Floodwater Retarding Structure No. 22	166,540	61,800	228,340
2nd	Multiple-purpose Structure No. 23, and Basic Recreational Facilities	1,721,840	1,253,750	2,975,590

This schedule may be changed from year to year to conform with appropriation, accomplishments, or any mutually desirable changes.

Federal assistance for installing the remaining structural measures will be provided under the authority of the Watershed Protection and Flood Prevention Act, Public Law 83-566, as amended.

The SCS will contract for the construction of the remaining project measures.

Financial and other assistance to be furnished by the SCS is contingent on the appropriation of funds for this purpose. In addition, the prerequisite conditions as spelled out in the watershed plan, as supplemented, will be met before federal funds will be made available for the installation of the project measures.

OPERATION, MAINTENANCE, AND REPLACEMENT

The provisions and responsibilities for operation, maintenance and replacement will be as stated in the watershed plan, as supplemented.

The U. S. Forest Service will be responsible for the operation of the greentree reservoir and the Nacogdoches County Commissioners Court will be responsible for all needed maintenance.

REVISED TABLE 1 - ESTIMATED INSTALLATION COST
Attoyac Bayou Watershed, Texas

Installation Cost Item	Number		Estimated Cost (Dollars) 1/						
			PL-566 Funds			Other			
	Unit	Nonfederal Land	Nonfederal Land SCS	Nonfederal Land FS	Total	Nonfederal Land SCS	Nonfederal Land FS	Total	TOTAL
STRUCTURAL MEASURES									
Floodwater Retarding Structures	No.	13	2,702,890		2,702,890	248,400		248,400	2,951,290
Multiple Purpose Structure	No.	1	997,300		997,300	529,210		529,210	1,526,510
Basic Recreation Facilities	No.	1	724,540		724,540	724,540		724,540	1,449,080
Subtotal Structural Costs			4,424,730		4,424,730	1,502,150		1,502,150	5,926,880
PROJECT ADMINISTRATION									
Construction Inspection			244,540		244,540	17,190		17,190	261,730
Other			326,700		326,700	28,810		28,810	355,510
Subtotal - Administration for Structural Measures			571,240		571,240	46,000		46,000	617,240
TOTAL INSTALLATION COST			4,995,970		4,995,970	1,548,150		1,548,150	6,544,120
TOTAL PROJECT COSTS 2/			4,995,970		4,995,970	1,548,150		1,548,150	6,544,120

1/ Price Base: 1980 prices except for Floodwater Retarding Structures Nos. 2, 3, 5, 7, 8, 9, 11, 12, 15, 18A, 20 and 21 which are actual costs.

2/ Excludes Land Treatment. Accelerated land treatment has been completed.

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REVISED TABLE 2 - ESTIMATED COST DISTRIBUTION
Attoyac Bayou Watershed, Texas
(Dollars) 1/

Item	Installation Cost PL-566 Funds				Installation Cost - Other Funds					Total Installation Cost
	Construction	Engineering	Land Rights	Total PL-566	Construction	Engineering	Land Rights	Water Rights	Total Other	
STRUCTURAL MEASURES										
Floodwater Retarding Structures Nos. 2,3,5,7,8,9,11,12, 15, and 18A 2/	1,874,490	197,360		2,071,850			164,100		164,100	2,235,950
SUBTOTAL	1,874,490	197,360		2,071,850			164,100		164,100	2,235,950
NACONICHE CREEK SUBWATERSHED STRUCTURAL MEASURES										
Floodwater Retarding Structures Nos. 20 and 21 2/	422,830	41,670		464,500			22,500		22,500	487,000
Floodwater Retarding Structure No. 22	150,040	16,500		166,540			61,800		61,800	228,340
Multiple Purpose Structure No. 23	702,010	58,020	237,270 4/	997,300	264,940		263,770 3/	500	529,210	1,526,510
Basic Recreation Facilities	263,160	23,680 5/	437,700 6/	724,540	263,160	23,680 5/	437,700 6/		724,540	1,449,080
SUBTOTAL	1,538,040	139,870	674,970	2,352,880	528,100	23,680	785,770	500	1,338,050	3,690,930
SUBTOTAL - STRUCTURAL	3,412,530	337,230	674,970	4,424,730	528,100	23,680	949,870	500	1,502,150	5,926,880
PROJECT ADMINISTRATION				571,240					46,000	617,240
GRAND TOTAL	3,412,530	337,230	674,970	4,995,970	528,100	23,680	949,870	500	1,548,150	6,544,120

1/ Price Base: 1980 prices except for floodwater retarding structures nos. 2, 3, 5, 7, 8, 9, 11, 12, 15, 18A, 20 and 21 which are actual costs.
2/ Constructed
3/ Includes $14,000 for flowage easements, $12,500 for legal fees and land surveys and $52,470 for relocations and modification of fixed improvements.
4/ Includes $52,470 for relocations and modification of fixed improvements.
5/ Architectural and engineering contracts.
6/ Includes $424,500 for access road for recreation area at Lake Naconiche.

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REVISED TABLE 2A - COST ALLOCATION AND COST SHARING SUMMARY
Attoyac Bayou Watershed, Texas
(Dollars) 1/

Item	Cost Allocation Purpose: Flood Prevention	Cost Allocation Purpose: Recreation	Cost Allocation Purpose: Total	Cost Sharing Public Law 566: Flood Prevention	Cost Sharing Public Law 566: Recreation	Cost Sharing Public Law 566: Total	Cost Sharing Other: Flood Prevention	Cost Sharing Other: Recreation	Cost Sharing Other: Total
STRUCTURAL MEASURES									
10 Floodwater Retarding Structures	2,235,950		2,235,950	2,071,850		2,071,850	164,100		164,100
Subtotal	2,235,950		2,235,950	2,071,850		2,071,850	164,100		164,100
NACONICHE CREEK SUBWATERSHED									
STRUCTURAL MEASURES									
3 Floodwater Retarding Structures	715,340		715,340	631,040		631,040	84,300		84,300
Basic Recreation Facilities		1,449,080	1,449,080		724,540	724,540		724,540	724,540
Multiple Purpose Site 23	489,790	1,036,720	1,526,510	343,540	653,760	997,300	146,250	382,960	529,210
Subtotal	1,205,130	2,485,800	3,690,930	974,580	1,378,300	2,352,880	230,550	1,107,500	1,338,050
GRAND TOTAL	3,441,080	2,485,800	5,926,880	3,046,430	1,378,300	4,424,730	394,650	1,107,500	1,502,150

1/ Price Base: 1980 prices except for floodwater retarding structures constructed, which are actual costs.

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REVISED TABLE 3 - STRUCTURE DATA - DAMS WITH PLANNED STORAGE CAPACITY
Attoyac Bayou Watershed, Texas

Item	Unit	Naconiche Creek Subwatershed Subtotal	Total
Class of Structure			
Drainage Area	Sq. Mi.	38.83	74.96
Controlled	Sq. Mi.	38.83	74.96
Runoff Curve No. (1-day) (AMC II)		xxx	xxx
Elevation Top of Dam	Ft.	xxx	xxx
Elevation Crest Emergency Spillway	Ft.	xxx	xxx
Elevation Crest High Stage Inlet	Ft.	xxx	xxx
Elevation Crest Low Stage Inlet	Ft.	xxx	xxx
Maximum Height of Dam	Ft.	xxx	xxx
Volume of Fill	Cu. Yds.	484,000	1,412,000
Total Capacity 1/	Ac. Ft.	16,388	31,029
Sediment (Lowest Ungated Outlet)	Ac. Ft.	348	953
Sediment Submerged	Ac. Ft.	361	809
Sediment Aerated	Ac. Ft.	130	364
Recreation	Ac. Ft.	6,617	6,617
Floodwater Retarding	Ac. Ft.	8,932	22,090
Between High and Low Stage	Ac. Ft.	xxx	xxx
Surface Area			
Sediment Pool (Lowest Ungated Outlet)	Acres	51	293
Sediment Pool	Acres	79	437
Recreation Pool	Acres	585	585
Floodwater Retarding Pool 1/	Acres	1,297	2,783
Principal Spillway Design			
Rainfall Volume (1-day)	In.	xxx	xxx
Rainfall Volume (10-day)	In.	xxx	xxx
Runoff Volume (10-day)	In.	xxx	xxx
Capacity of Low Stage (Maximum)	C.F.S.	xxx	xxx
Capacity of High Stage (Maximum)	C.F.S.	xxx	xxx
Dimensions of Conduit	In.	xxx	xxx
Emergency Spillway Design			
Frequency Operation - Emergency Spillway	% Chance	xxx	xxx
Rainfall Volume (ESH)	In.	xxx	xxx
Runoff Volume (ESH)	In.	xxx	xxx
Storm Duration	Hrs.	xxx	xxx
Type		xxx	xxx
Bottom Width	Ft.	xxx	xxx
Velocity of Flow (V_e)	Ft./Sec.	xxx	xxx
Slope of Exit Channel	Ft./Ft.	xxx	xxx
Maximum Reservoir Water Surface Elevation	Ft.	xxx	xxx
Freeboard Design			
Rainfall Volume (FH)	In.	xxx	xxx
Runoff Volume (FH)	In.	xxx	xxx
Storm Duration	Hrs.	xxx	xxx
Maximum Reservoir Water Surface Elevation	Ft.	xxx	xxx
Capacity Equivalents			
Sediment Volume	In.	xxx	xxx
Floodwater Retarding Volume	In.	xxx	xxx
Recreation Volume	In.	xxx	xxx

1/ Crest of emergency spillway

REVISED TABLE 4 - ANNUAL COST

Attoyac Bayou Watershed, Texas
(Naconiche Creek Subwatershed)

(Dollars) 1/

Evaluation Unit	Amortization of Installation Cost 2/	Operation and Maintenance Cost 3/	Total
Floodwater Retarding Structures 20 through 22 and Multiple-Purpose Structure No. 23, including Basic Recreation Facilities	120,910	45,670	166,580
Project Administration	10,160		10,160
GRAND TOTAL	131,070	45,670	176,740

1/ Price base: 1980 except for floodwater retarding structure Nos. 20 & 21 which are actual costs.
2/ Amortized at 3.125 percent for 100 years.
3/ Operation, maintenance and replacement costs assigned to the basic recreation facilities, $44,670 annually.

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REVISED TABLE 5 - ESTIMATED AVERAGE ANNUAL FLOOD DAMAGE REDUCTION BENEFITS

Attoyac Bayou Watershed, Texas
(Naconiche Creek Subwatershed)

(Dollars) 1/

Item	Estimated Average Annual Damage: Without Project	Estimated Average Annual Damage: With Project	Damage Reduction Benefits 2/
Floodwater			
Crop and Pasture	67,590	50,270	17,320
Other Agriculture	30,990	21,330	9,660
Nonagricultural Road and Bridge	28,840	19,980	8,860
Subtotal	127,420	91,580	35,840
Indirect	12,740	9,080	3,660
GRAND TOTAL	140,160	100,660	39,500

1/ Price base: Current Normalized Prices (September 1979) for Crop and Pasture damages and Current (1979) Prices for Non-Agricultural Damages for structural measures remaining and the appropriate price base in effect at the time of construction for structural measures that are built.

2/ Excludes Effects of Accelerated Land Treatment Measures.

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REVISED TABLE 6 - COMPARISON OF BENEFITS AND COSTS

Attoyac Bayou Watershed, Texas
(Naconiche Creek Subwatershed)

(Dollars) 1/

Evaluation Unit	AVERAGE ANNUAL BENEFITS 1/				Average Annual Cost 3/	Benefit Cost Ratio
	Flood Prevention					
	Damage Reduction 2/	More Intensive Land Use	Recreation	Total		
Floodwater Retarding Structures 20 through 22 and Multiple-Purpose Structure No. 23, including Basic Recreational Facilities	39,500	25,860	220,500	285,860	166,580	1.7:1.0
Project Administration					10,160	
GRAND TOTAL	39,500	25,860	220,500	285,860	176,740	1.6:1.0

1/ Price base: Current Normalized Prices (September 1979) for Crop and Pasture damages and Current (1979) Prices for Non-Agricultural damages for structural measures remaining and the appropriate price base in effect at the time of construction for structural measures that are built.
2/ From Table 5
3/ From Table 4

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SITE NUMBER	DRAINAGE AREA ACRES
2	1,344
3	3,968
5	3,648
7	813
8	1,984
9	1,408
11	3,533
12	1,638
15	2,842
18A	1,950
20	3,309
21	2,438
22	2,317
23	16,787

Figure 6

PROJECT MAP
ATTOYAC BAYOU WATERSHED
NACOGDOCHES, RUSK, SAN AUGUSTINE AND SHELBY COUNTIES, TEXAS
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
TEMPLE, TEXAS

COMPILED FROM UNCONTROLLED MOSAIC 4-R-16827

Revised OCTOBER 1980 4-R-18768

12-28-62 Rev. 5-64 4-R-11693

USDA--SCS--FORT WORTH, TEXAS 1980