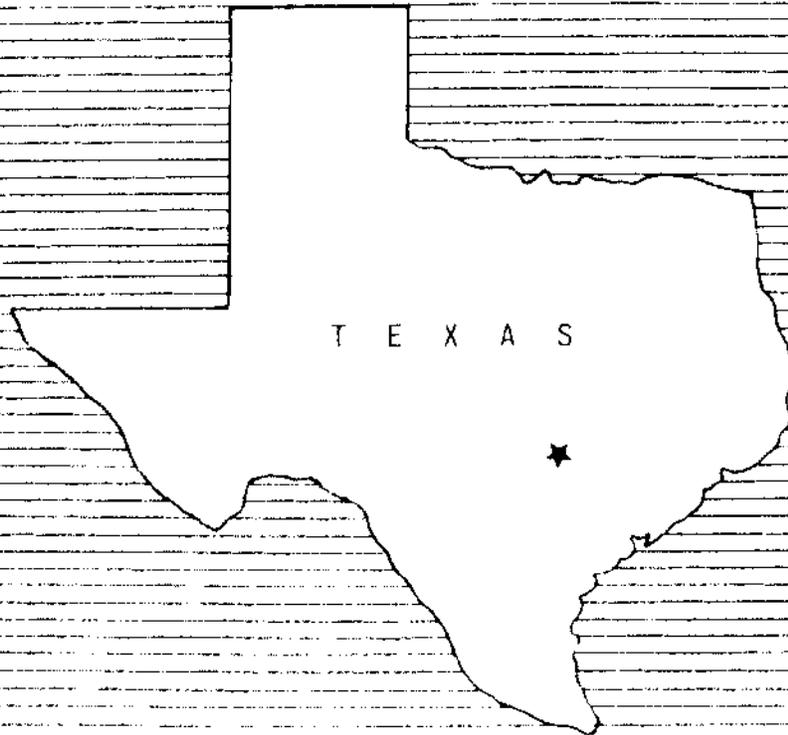


SUPPLEMENTAL
WATERSHED WORK PLAN NO. III
FOR
WATERSHED PROTECTION AND FLOOD PREVENTION
**LOWER PLUM CREEK
WATERSHED**

HAYES AND CALDWELL COUNTIES, TEXAS



FEBRUARY 1973

TABLE OF CONTENTS

	<u>Page</u>
PURPOSE OF THE SUPPLEMENTAL WORK PLAN	1
BASIS FOR PROJECT FORMULATION	1
WORKS OF IMPROVEMENT TO BE INSTALLED	2
EXPLANATION OF INSTALLATION COST	3
EFFECTS OF WORKS OF IMPROVEMENT	3
PROJECT BENEFITS	4
COMPARISON OF BENEFITS AND COSTS	5
PROJECT INSTALLATION	5
PROVISIONS FOR OPERATION AND MAINTENANCE	5
 TABLES	
Table 1 - Estimated Project Installation Cost (Revised)	7
Table 2 - Estimated Structure Cost Distribution (Revised)	8
Table 3 - Structural Data - Structures with Planned Storage Capacity (Revised)	9
Table 6 - Annual Cost (Revised)	10
Table 7 - Estimated Average Annual Flood Damage Reduction Benefits (Revised)	11
Table 8 - Comparison of Benefits and Costs for Structural Measures (Revised)	12
 FIGURE	
Figure 3 - Project Map	

SUPPLEMENTAL WATERSHED WORK PLAN AGREEMENT NO. III

Between the

Hays-Caldwell-Travis Soil and Water Conservation District
Local Organization

Plum Creek Conservation District
Local Organization

City of Luling, Texas
Local Organization

State of Texas
(hereinafter referred to as the Sponsoring Local Organization)

and the

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

Whereas, the Watershed Work Plan Agreement for Lower Plum Creek Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 29th day of June 1961; and

Whereas, Supplemental Watershed Work Plan Agreements for Lower Plum Creek Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 3rd day of June 1966 and the 16th day of July 1971; and

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

Whereas, it has been found necessary to modify the Watershed Work Plan Agreement, as supplemented, by adding one floodwater retarding structure to provide protection to agricultural and urban properties in and near the City of Luling, Texas; and

Whereas, the City of Luling wishes to assume its responsibilities as a sponsor; and

Whereas, a Supplemental Watershed Work Plan, which modifies the watershed work plan dated August 1960 for said watershed, has been developed through the cooperative efforts of the Sponsoring Local Organization and the Service, which plan is annexed to and made a part of this agreement;

Now, therefore, the Sponsoring Local Organization and the Service hereby agree upon the following modifications of the terms, conditions, and stipulations of said Watershed Work Plan Agreement, as supplemented;

1. The City of Luling, Texas, hereby agrees to become one of the local organizations sponsoring said watershed program.

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

The Sponsoring Local Organization will acquire, with other than Public Law 83-566 funds, such land, easements, or rights-of-way as will be needed in connection with works of improvement. (Estimated cost \$409,104).

3. Paragraph numbered 3 is changed to read as follows:

The percentages of construction costs of structural measures and land treatment measures for flood prevention to be paid by the Sponsoring Local Organization and by the Service are as follows:

<u>Works of Improvement</u>	<u>Sponsoring Local Organization (percent)</u>	<u>Service (percent)</u>	<u>Estimated Construction Cost (dollars)</u>
16 Floodwater Retarding Structures	0	100	1,434,926
24.7 Miles Stream Channel Improvement	0	100	1,444,920

4. Paragraph numbered 4 is modified as follows:

The percentage of engineering costs to be borne by the Sponsoring Local Organization and the Service are as follows:

<u>Works of Improvement</u>	<u>Sponsoring Local Organization (percent)</u>	<u>Service (percent)</u>	<u>Estimated Engineering Cost (dollars)</u>
16 Floodwater Retarding Structures	0	100	141,477
24.7 Miles Stream Channel Improvement	0	100	72,250

Now, therefore, the Sponsoring Local Organization and the Service hereby agree upon the following modifications of the terms, conditions, and stipulations of said Watershed Work Plan Agreement, as supplemented;

1. The City of Luling, Texas, hereby agrees to become one of the local organizations sponsoring said watershed program.

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

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16 Floodwater Retarding Structures	0	100	141,477
24.7 Miles Stream Channel Improvement	0	100	72,250

Hays-Caldwell-Travis Soil and Water Conservation District
Local Organization

By [Signature]
Title Chairman
Address [Address] Zip Code
Date 2-1-73

The signing of this agreement was authorized by a resolution of the governing body by the Hays-Caldwell-Travis Soil and Water Conservation District Local Organization

adopted at a meeting held on Dec. 5, 1972
[Signature]
(Secretary, Local Organization)
Address P.O. Box 95 Martindale, Tex. 78655 Zip Code
Date 2-27-73

Plum Creek Conservation District
Local Organization

By [Signature]
Title President
Address [Address] Zip Code
Date February 22, 1973

The signing of this agreement was authorized by a resolution of the governing body of the Plum Creek Conservation District Local Organization

adopted at a meeting held on Nov. 8, 1972
[Signature]
(Secretary, Local Organization)
Vice-Pres.
Address [Address] Zip Code
Date Feb. 22, 1973

City of Luling, Texas

Local Organization

By J. B. Nicholls
Title Mayor, City of Luling
Address 437 W. Austin St.
Luling, Texas 78648 Zip Code
Date 2/22/73

The signing of this agreement was authorized by a resolution of the governing body of the City of Luling, Texas Local Organization

adopted at a meeting held on November 15, 1972

Richard L. Lee
(Secretary, Local Organization)
Address 1111 W. 1st St. 78648
Zip Code
Date February 22, 1973

Soil Conservation Service
United States Department of Agriculture

By Edward E. Thomas
Date 2-22-73

SUPPLEMENTAL
WATERSHED WORK PLAN NO. III
FOR
WATERSHED PROTECTION AND FLOOD PREVENTION

LOWER PLUM CREEK WATERSHED
Hays and Caldwell Counties, Texas

Prepared Under the Authority of the Watershed
Protection and Flood Prevention Act, (Public
Law 566, 83rd Congress, 68 Stat. 666), as
amended.

Prepared by:

Hays-Caldwell-Travis Soil and Water Conservation District
(Co-Sponsor)

Plum Creek Conservation District
(Co-Sponsor)

City of Luling, Texas
(Co-Sponsor)

With Assistance by:

U.S. Department of Agriculture
Soil Conservation Service

February 1973

SUPPLEMENTAL

WATERSHED WORK PLAN NO. III

LOWER PLUM CREEK WATERSHED
Hays and Caldwell Counties, Texas
February 1973

PURPOSE OF THE SUPPLEMENTAL WORK PLAN

During the development of the watershed work plan for the Lower Plum Creek Watershed only limited information was available concerning flood damages on the flood plain of Cottonwood Creek and flood prevention measures for this portion of the watershed were not considered necessary to the achievement of a satisfactory level of flood damage reductions. Subsequent to work plan development, several heavy rains have fallen on the watershed of Cottonwood Creek which have resulted in floodwater damages to urban properties in the City of Luling.

This supplement to the work plan provides for the installation of one additional floodwater retarding structure to provide needed flood protection for urban properties in the City of Luling which are subject to flooding from Cottonwood Creek. It also modifies the watershed work plan, as supplemented, to reflect current policy and terminology relative to engineering and project administration costs. Costs of all structural measures not constructed are updated to 1972 prices to reflect current cost estimates. All damages and benefits are updated to adjusted normalized prices, or to current prices as applicable to reaffirm economic feasibility. The City of Luling, Texas, is added as a sponsoring local organization.

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

BASIS FOR PROJECT FORMULATION

Cottonwood Creek is a tributary to Plum Creek. Cottonwood Creek rises about two miles north of the City of Luling, flows in a southerly direction through the city, and confluences with Plum Creek about two miles below the city. Cottonwood Creek is ephemeral and has a well defined, unmodified channel. The capacity of Cottonwood Creek is totally inadequate to convey safely the runoff originating within its watershed. The 136 acres of flood plain within the Cottonwood drainage area are subject to frequent flooding. About 46 acres of this area is within the City of Luling and 90 acres is agricultural land below the city. Floods that result in inundation of homes, public improvements, and agricultural properties occur on the average of more than once every 10 years.

Most of the area subject to flooding in Luling is populated by residents with below average incomes. A significant part of the wage earners residing in the area suffer from chronic underemployment. These residents

are not able to sustain flood losses without materially reducing their standard of living.

Under the present level of development, it is estimated that 23 homes, utility installations, and streets would be damaged from a 100-year frequency flood event. The direct floodwater damages to existing urban properties that would result from such a flood are estimated at \$13,100 at the present level of development.

For the floods evaluated, which includes floods up to the 100-year frequency, the total projected direct floodwater damage discounted to present worth is estimated to average \$5,110 annually at adjusted normalized and current prices. Of this amount, \$50 is crop and pasture damage, \$4,910 is damage to urban residential properties, and \$150 is damage to city streets.

WORKS OF IMPROVEMENT TO BE INSTALLED

This supplemental watershed work plan provides for the installation of floodwater retarding structure No. 38 to provide flood protection to the flood plain of Cottonwood Creek not afforded by the measures included in the watershed work plan as previously supplemented. The total structural measures to be installed will change to 16 floodwater retarding structures and 24.7 miles of stream channel improvement (revised figure 3).

Floodwater retarding structure No. 38 will have a total capacity of 870 acre feet of which 118 acre feet is for the expected 100-year sediment accumulation and 752 acre feet is for floodwater detention. The floodwater detention is equivalent to 6.57 inches of runoff from 2.15 square miles of drainage area, which is 88.2 percent of the drainage area of Cottonwood Creek above Luling. A combination of principal spillway capacity and retarding storage will provide a one percent chance of emergency spillway use. The crest of the principal spillway will be set at the elevation of the 100-year sediment pool.

There are no major factors which will affect construction of floodwater retarding structure No. 38. The on-site material for use in the embankment will require zoning. There should be little, if any, wastage required. Foundation drainage features will be needed.

Installation of floodwater retarding structure No. 38 will require an easement to temporarily inundate the rights-of-way and lines or will require change in location or modification of utility power lines and four underground oil pipelines. There are no existing private road crossings below the planned floodwater retarding structure that will be made impassable by release flows. All costs for necessary changes in location or modification as listed above are land rights costs and will be borne by the sponsoring local organizations.

Under present conditions, the acquisition of land rights needed for the installation of floodwater retarding structure No. 38 will not result in the displacement of persons, businesses, or farm operations. However, if

relocation or displacement becomes necessary, relocation payments will be cost shared in accordance with percentages shown in the Supplemental Work Plan Agreement No. II.

The environment will be protected from soil erosion and water and air pollution during construction. Contractors will be required to adhere to strict guidelines set forth in the construction contract to minimize soil erosion and water and air pollution during construction. Stringent requirements for safety and health in conformance with the Construction Safety Act will be included in the construction contract.

All applicable State laws will be complied with in the design and construction of floodwater retarding structure No. 38, as well as those pertaining to storage, maintenance of quality, and use of water.

EXPLANATION OF INSTALLATION COST

The total installation cost of floodwater retarding structure No. 38 is estimated to be \$96,900, of which \$87,600 will be borne by Public Law 566 funds and \$9,300 will be borne by local interests.

The Public Law 566 costs consists of \$70,140 for construction, \$4,910 for engineering services, and \$12,550 for project administration.

The local costs for installation of structural measures include \$8,000 for the value of land; \$300 for relocation of fences, \$500 for legal fees; and \$500 for project administration. The local cost for project administration includes sponsors costs relative to contract administration, overhead and organizational costs, and whatever construction inspection they desire to make at their own expense. Land rights costs consists of legal fees, land surveys, values of easements, and modification of fixed improvements.

Public Law 566 project administration costs consist of construction inspection, maintenance of records and accounts, and contract administration. Engineering services cost consist of, but are not limited to, detail surveys, geologic investigations, laboratory analyses, reports, designs, and cartographic services.

Updated total project costs are shown on Revised Table 1. Updated costs of all structural measures are shown on Revised Table 2.

EFFECTS OF WORKS OF IMPROVEMENT

The installation of floodwater retarding structure No. 38 will benefit directly the owners and operators of 5 farms and ranches in the flood plain of Cottonwood Creek and the owners and occupants of 23 residential units in Luling through reduction of floodwater damage.

After installation of the combined land treatment and the structural measures, average annual flooding will be reduced from 79 acres to 26 acres, a reduction of 67 percent.

The proposed floodwater retarding structure No. 38 will provide flood-free protection from the 100-year event to all existing residential properties subject to flooding from Cottonwood Creek. With the project, urban damages from such a flood will be eliminated. The actions of people during times of floods, whether major or minor, cannot be predicted. However, with any reasonable precautions, the hazard to life from floodwaters will be eliminated.

Analysis of information collected indicated that no significant changes would be made in the use of agricultural land within the flood plain of Cottonwood Creek, either in the form of restoration of former productivity or in more intensive use. There are no allotted crops and no significant changes are expected.

The installation of floodwater retarding structure No. 38 will require a total of 30 acres of land in the sediment pool and 15 acres in the dam, and emergency spillway. This 45 acres will be retired from agricultural production. There are 78 acres required for the floodwater retarding pool of which all is presently rangeland.

There are no known mineral resources within the Cottonwood Creek tributary drainage area that will be affected by the installation of the structure. No benefits from incidental use of the floodwater retarding structure were calculated due to the uncertainty of use. The sponsors will encourage installation of sanitary facilities meeting State and local health requirements prior to any use of the pool area for recreation.

There are no historic sites or properties listed in, or in the process of nomination to, the National Register of Historic Places. No archeological sites have been recorded in Cottonwood Creek drainage area and geologic studies of the floodwater retarding structure No. 38 by Service personnel did not evidence any archeologic features that would be affected by its installation.

PROJECT BENEFITS

The estimated average annual monetary floodwater and indirect damages (revised table 7) within the flood plain of Cottonwood Creek will be reduced from \$6,130 to \$20, a reduction of 99.7 percent. Of this amount, crop and pasture damages will be reduced from \$60 to \$20. Average annual damages of \$6,070 to urban properties from floods up to and including a 100-year frequency event will be eliminated.

It is estimated that the installation of floodwater retarding structure No. 38 will produce local secondary benefits which exclude indirect benefits in any form, averaging \$480 annually. Secondary benefits from a national viewpoint were not considered pertinent to the economic evaluation.

COMPARISON OF BENEFITS AND COSTS

Total average annual cost of structural measures (amortized total installation plus operation and maintenance) is \$159,638. These measures are expected to produce average annual benefits, excluding secondary benefits of \$198,273, resulting in a benefit-cost ratio of 1.2:1.0.

The ratio of total average annual project benefits, including secondary benefits, accruing to structural measures (\$217,220) to the average annual cost of these measures (\$159,638) is 1.4:1.0 (revised table 8).

PROJECT INSTALLATION

The City of Luling will be responsible for the installation of floodwater retarding structure No. 38.

The city has the right of eminent domain and has the financial resources necessary to fulfill its responsibilities.

The Soil Conservation Service, in compliance with a request from the sponsors, will provide the necessary administrative and clerical personnel; facilities, supplies, and equipment to advertise, award, and administer contracts; and will be the contracting agency to let and service contracts.

The City of Luling will have the following responsibilities pertaining to the planned floodwater retarding structure No. 38.

1. Obtain the necessary land rights;
2. Provide for the change in location or modification of utility lines, underground oil pipelines, and private-owned improvements necessary for installation of floodwater retarding structure No. 38; and
3. Determine and certify legal adequacy of easements and permits for construction of the structural measure.

Technical assistance will be provided by the Soil Conservation Service in preparation of plans and specifications, construction inspection, preparation of contract payment estimates, final inspection, execution of certificate of completion, and related tasks necessary to install the planned structural measure.

PROVISIONS FOR OPERATION AND MAINTENANCE

The Plum Creek Conservation District will be responsible for operation and maintenance of floodwater retarding structure No. 38. The Plum Creek Conservation District has a permanent reserve fund for this purpose. The estimated average annual cost of operation and maintenance for this floodwater retarding structure is \$200.

The operation and maintenance agreement executed by the sponsoring organization and the Service on the 11th day of September 1961 will be supplemented to include floodwater retarding structure No. 38 prior to executing a project agreement for construction of the structure.

REVISED TABLE 1 - ESTIMATED PROJECT INSTALLATION COST

Lower Plum Creek Watershed, Texas

Installation Cost Item	Unit	Number	Estimated Cost (Dollars) 1/		
			Public Law	Other	Total
			566 Funds	Non-Federal	Non-Federal
			Federal	Federal	Federal
			Land	Land	Land
<u>LAND TREATMENT</u>					
Soil Conservation Service			45,550	733,390	778,940
Land Treatment			72,880	54,640	127,520
Technical Assistance			118,430	788,030	906,460
TOTAL LAND TREATMENT					
<u>STRUCTURAL MEASURES</u>					
<u>Construction</u>					
Soil Conservation Service					
Floodwater Retarding Structures	No.	16	1,434,926	-	1,434,926
Channel Improvement (N) 2/	Miles	24.7	1,444,920	-	1,444,920
Subtotal-Construction			2,879,846	-	2,879,846
<u>Engineering Services</u>					
Soil Conservation Service			213,727	-	213,727
Subtotal-Engineering Services			213,727	-	213,727
<u>Project Administration</u>					
Soil Conservation Service			270,233	-	270,233
Construction Inspection			285,267	9,000	294,267
Other				9,000	564,500
Subtotal-Project Administration			555,500	9,000	564,500
<u>Other Costs</u>					
Land Rights			-	409,104	409,104
Subtotal - Other Costs			-	409,104	409,104
TOTAL STRUCTURAL MEASURES			3,649,073	418,104	4,067,177
TOTAL PROJECT			3,767,503	1,206,134	4,973,637

1/ Price Base: Land Treatment-1959; Structural Measures-1972 except for structures Nos. 23, 24, 26, 28, 29, 30, and 34 which are actual costs.

2/ (N) - Unmodified, well defined natural channel or stream.

Supplement No. III
February 1973

REVISED TABLE 2 - ESTIMATED STRUCTURE COST DISTRIBUTION

Lower Plum Creek Watershed, Texas
(Dollars) 1/

Item	Installation Costs			Installation Costs			Total Installation Cost
	P. L. 566 Funds	Total	Other Funds	Land	Other	Total	
	: Construction:Engineering : P. L. 566 :			: Rights :			
Floodwater Retarding							
Structures Nos. 23, 24,	551,246	85,897	637,143	117,918	117,918	235,836	755,061
26, 28, 29, 30 and 34	91,560	6,410	97,970	19,779	19,779	177,749	117,749
25	106,080	6,360	112,440	15,497	15,497	127,937	127,937
27	70,800	4,960	75,760	8,885	8,885	84,645	84,645
31	74,280	5,200	79,480	13,364	13,364	92,844	92,844
32	76,080	5,330	81,410	10,079	10,079	91,489	91,489
33	189,960	9,500	199,460	52,705	52,705	252,165	252,165
35	142,380	8,540	150,920	47,097	47,097	198,017	198,017
36	62,400	4,370	66,770	17,300	17,300	84,070	84,070
37	70,140	4,910	75,050	8,800	8,800	83,850	83,850
38							
Subtotal	1,434,926	141,477	1,576,403	311,424	311,424	1,887,827	1,887,827
Channel Improvement							
24.7 miles (N) 2/	1,444,920	72,250	1,517,170	97,680	97,680	1,614,850	1,614,850
Subtotal	1,444,920	72,250	1,517,170	97,680	97,680	1,614,850	1,614,850
Project Administration			555,500			9,000	564,500
GRAND TOTAL	2,879,846	213,727	3,649,073	409,104	418,104	4,067,177	4,067,177

1/ Price Base: 1972 except for structures Nos. 23, 24, 26, 28, 29, 30 and 34 which are actual costs.

2/ (N)-Unmodified, well defined natural channel or stream.

Supplement No. III
February 1973

REVISED TABLE 3 - STRUCTURAL DATA
STRUCTURES WITH PLANNED STORAGE CAPACITY
 Lower Plum Creek Watershed, Texas

Item	: Unit :	: Structure No. :	: Total :
Class of Structure		C	xxx
Drainage Area (Total)	Sq.Mi.	2.15	95.33
Curve No. (1-day)(AMC II)		79	xxx
Elevation Top of Dam	Ft.	407.8	xxx
Elevation Crest Emergency Spillway	Ft.	400.9	xxx
Elevation Crest Principal Spillway	Ft.	389.6	xxx
Elevation Crest Lowest Ungated Outlet	Ft.	384.0	xxx
Maximum Height of Dam	Ft.	30	xxx
Volume of Fill	Cu.Yds.	72,800	2,537,060
Total Capacity <u>1/</u>	Ac.Ft.	870	33,082
Sediment Submerged	Ac.Ft.	113 <u>2/</u>	4,880 <u>3/</u>
Sediment Aerated	Ac.Ft.	5	697
Retarding	Ac.Ft.	752	28,197
Surface Area			xxx
Sediment Pool <u>2/</u>	Acres	30	942
Retarding Pool <u>1/</u>	Acres	108	3,521
Principal Spillway Design			xxx
Rainfall Volume (areal) (1-day)	In.	10.50	xxx
Rainfall Volume (areal) (10-day)	In.	17.00	xxx
Runoff Volume (10-day)	In.	11.72	xxx
Capacity (Max.)	cfs.	89	xxx
Frequency Operation-Emergency Spillway	%chance	1.0	xxx
Dimensions of Conduit	In.	30	xxx
Emergency Spillway Design			xxx
Rainfall Volume (ESH) (areal)	In.	13.80	xxx
Runoff Volume (ESH)	In.	11.05	xxx
Storm Duration	Hrs.	6.0	xxx
Type	Veg.		xxx
Bottom Width	Ft.	100	xxx
Velocity of Flow (V_e)	Ft./Sec.	7.4	xxx
Slope of Exit Channel	Ft./Ft.	0.030	xxx
Max. Reservoir Water Surface Elevation	Ft.	403.3	xxx
Freeboard Design			xxx
Rainfall Volume (FH) (areal) (-hrs)	In.	31.40	xxx
Runoff Volume (FH)	In.	28.42	xxx
Storm Duration	Hrs.	6.0	xxx
Max. Reservoir Water Surface Elevation	Ft.	407.8	xxx
Capacity Equivalents			xxx
Sediment Volume	In.	1.03	xxx
Retarding Volume	In.	6.57	xxx

1/ Crest of Emergency Spillway

2/ 100-Year

3/ Structures Nos. 1 through 37 designed for 50-year sediment

Supplement No. III
February 1973

REVISED TABLE 6 - ANNUAL COST

Lower Plum Creek Watershed, Texas
(Dollars)

Evaluation Unit	: Amortization : : of : : Installation : : Cost 1/ :	: Operation : : and : : Maintenance : : Cost 2/ :	: Total
Floodwater Retarding Structures Nos. 23 through 37 and Channel Improvement	123,556	12,699	136,255
Floodwater Retarding Structure No. 38	2,850	200	3,050
Project Administration	20,333		20,333
GRAND TOTAL	146,739	12,899	159,638

1/ Price Base: Actual costs for structures Nos. 23, 24, 26, 28, 29, 30, and 34, and 1972 costs for structures Nos. 25, 27, 31, 32, and 33 amortized for 50-years at 2.625 percent; and 1972 costs for structure No. 38 amortized for 100-years at 3.250 percent

2/ Price Base: 1972

Supplement No. III
February 1973

REVISED TABLE 7 - ESTIMATED AVERAGE ANNUAL FLOOD DAMAGE REDUCTION BENEFITS

Lower Plum Creek Watershed, Texas
(Dollars) 1/

Item	: Estimated Average Annual Damage :		Damage
	: Without	: With	: Reduction
	: Project	: Project	: Benefits
Floodwater			153,548
Crop and Pasture	165,843	12,295	
Other Agricultural	27,053	2,763	24,290
Nonagricultural			29,876
Road and Bridge	33,497	3,621	
Urban		0	4,910
Residential Property	4,910	0	150
Streets and Utilities	150	0	
Subtotal	231,453	18,679	212,774
Sediment			21,784
Overbank Deposition	32,333	10,549	
Erosion			2,949
Flood Plain Scour	5,160	2,211	
Indirect	16,755	3,142	13,613
TOTAL	285,701	34,581	251,120 <u>2/</u>

1/ Price Base: Nonagricultural damages - Current prices (1972); All other damages - Adjusted normalized prices, April 1966

2/ \$51,519 of this amount will accrue to the flood prevention project being installed in the Plum Creek watershed.

Supplement No. III
February 1973

REVISED TABLE 8 - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

Lower Plum Creek Watershed, Texas
(Dollars)

Evaluation Unit	: Damage : Reduction:	: AVERAGE ANNUAL BENEFITS 1/ :			: Total :	: Average Annual Cost :	: Benefit Cost Ratio :
		: Changed : Land Use :	: Sediment Reduction :	: Reservoir : Secondary :			
Floodwater Retarding Structures Nos. 23 through 37 and Stream Channel Improvement	180,705	7,932	3,836	18,467	210,940	136,255	1.5:1.0
Floodwater Retarding Structure No. 38	5,800	xxx	xxx	480	6,280	3,050	2.1:1.0
Project Administration						20,333	
GRAND TOTAL	186,505 <u>3/</u>	7,932	3,836	18,947	217,220	159,638	1.4:1.0

1/ Price Base: Nonagricultural benefits-Current prices (1972); All other benefits-Adjusted normalized prices, April 1966

2/ From Revised Table 6

3/ In addition, it is estimated that land treatment measures will provide flood damage reduction benefits of \$14,187 annually.