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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service - Regional Technical Service Center
7600 West Chester Pike, Upper Darby, Pennsylvania

August 6, 1970

TSC-TECHNICAL NOTE - WATERSHEDS - UD-25

Re: Watersheds - Rounding of Numbers in Work Plans

This Technical Note provides a guide for rounding numbers used in the agreement, narrative and tables of Watershed Work Plans and River Basin Reports. Rounded numbers improve appearance and creditability, and reduce errors and conflicts.

Ideas presented herein and in the attachments can serve as a guide. However, they will not rule out the necessity for prudent judgment in each case. Therefore, in review of the examples attached, recognize that rounding of values for a particular Watershed Work Plan must be tailored for that particular plan.

The three rules which follow, sum up the ideas for rounding included herein.

1. Round answers that will appear in reports, work plans, and conclusions or summaries in basic supporting data.
2. Provide rounded answers to all specialists who use them.
3. Employ judgment in all cases.

The following discussion is directed at the problem areas.

Table #3

Desirable ranges for rounding work plan table No. 3 values are shown on the modified table No. 3 attached. The ranges shown can be applied to other tables and the narrative where similar values occur.

Drainage Area

The area of the watershed, important sub-divisions, land ownership, land use, etc., may usually be rounded to the nearest 100 or 10 acres depending on the size of the sub-elements. Watershed area is usually rounded to the nearest tenth when expressed in square miles.

STC

TSC

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TECHNICAL NOTES

Capacity Requirements

Capacity requirements are usually expressed initially in acre feet or cubic feet per second. Acre feet may be translated to its equivalent in inches over the watershed later.

Rounding of storage capacity can usually begin with required sediment storage on the form SCS-309. Total sediment capacity may usually be rounded to the next highest 5 to 10 acre feet. Sub-elements of total sediment capacity can usually be rounded to equal the total. Other capacity values may usually be rounded after computation to the nearest 5 to 10 acre feet.

Rate of flow in cfs. can usually be rounded to the nearest 5, 10, or 100 cfs.

In some cases, prudent engineering judgment may dictate that capacity, rate, and similar values be expressed in the nearest whole number.

Elevation

Elevation may be expressed to the nearest tenth of a foot as consistent with rounded capacities.

Estimated Costs and Benefits

When completing estimated costs for land treatment and structural measures, round totals and sub-elements that will appear in the work plan to the nearest \$10, \$100, or \$1000, etc., depending on the relative size of the values. Benefits may be rounded in a similar way.

Allocation and Sharing of Costs

Allocation and sharing of costs will be determined on a structure-by-structure basis for those cost breakdowns which will appear in the agreement. Round percentages to tenths. Round costs to \$1000, \$100 or \$10, dependent upon the size of the costs. After allocation, perform a check to insure that the P.L. 566 share, in either percentage or dollars, does not exceed established limits for that purpose. Make adjustments as needed.

A sample cost allocation - cost sharing problem for an assumed case is attached to illustrate the process of rounding. The assumed case is reflected in the attached example tables 2, 2A, 4, 5 and 6. Standard paragraphs for the agreement are attached to show how all values cross check.

Example - Cost Allocation - Cost Sharing
Flood Prevention - Recreation - Municipal Water Supply

The sample problem reflected on work sheets 1 through 5, attached shows rounding in both percentages and dollars to yield rounded values that appear in one place or another in the work plan. All allocation and sharing, percentages and dollars, have been rounded to insure that P.L. 566 funds bear no more and other funds bear no less than established limits. Percentages have been rounded to one-tenth percent and dollars to hundreds.

Sheet 1 of 5 shows a summary of the allocation-sharing rounding process in both percentages and dollars. Given the basis for allocation and sharing of land rights cost from Sheet 2 of 5 and an understanding of cost sharing policy, this work sheet alone will serve to complete the process.

Sheets 2, 3, 4, and 5 are included to illustrate the procedure in detail.

Sheet 2 of 5 shows:

- (1) Estimated installation costs rounded to the nearest \$1000.
- (2) Basis for allocation of costs by the use of facilities method utilizing rounded storage capacities. Note that the allocation percentage for flood prevention was rounded downward and the percentages for other purposes were rounded upward.
- (3) Basis for allocation of land rights cost. Allocation percentages for lands to be acquired in fee simple title and for modification or relocation of facilities are based upon subparagraph 108.091 b of the W.P.H. When necessary, the allocation percentage of the non-cost shared purpose is rounded upward. Allocation and sharing of costs for flowage easements and survey, legal fees, and other costs are based upon service policy.

Sheet 3 of 5 shows:

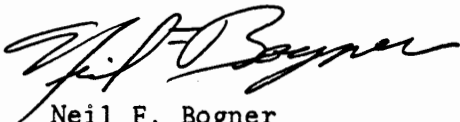
A convenient method for computing and rounding control P.L. 566 and other cost sharing percentages. This computation is based upon Sheet 2 of 5 and policy with respect to cost sharing. Note: Where necessary, P.L. 566 cost sharing percentages are rounded downward and other percentages are rounded upward.

Sheet 4 of 5 shows:

Sharing of costs between P.L. 566 and other funds for the structure. Computed dollars, based upon percentages from Sheet 4 of 5, are rounded to hundreds. P.L. 566 share is rounded downward and other shares are rounded upward.

Sheet 5 of 5 shows:

- (1) Allocation percentages for each purpose from Sheet 2 of 5 and P.L. 566 and other sharing percentages for each purpose are based upon policy. After addition, these sharing percentages will check with those on Sheet 3 of 5. Rounding and adjustments may be necessary in some cases.
- (2) Distribution of dollars in accordance with allocation and sharing percentages.



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UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

State _____ Project _____ No. Structure _____
 Subject COST ALLOCATION AND COST SHARING By _____ Date _____ Checked By _____ Date _____ Sheet _____ of _____

INSTALLATION COSTS-DOLLARS

Item	Specific 1/	Joint	Total
Construction	10,000	2,468,000	2,478,000
Engineering	1,000	444,000	445,000
Land Rights			
Fee Title		1,474,000	1,474,000
Flow Easement	27,000		27,000
Legal Survey		20,000	20,000
Relocation etc.			
Total	38,000	4,406,000	4,444,000

1/ Indicate purpose. 2/ See Para. 103.021c, W.P.H.

COST ALLOCATION-USE OF FACILITIES METHOD

Kind	Total Amount	Acre Feet of Storage Allocated to Purpose			
		F.P.	M&I	Rec.	Other
Sediment 2/	60	60			
Recreation	5,220			5,220	
M&I	180		180		
Other 1/					
Retarding	4,740	4,740			
Total	10,200	4,800	180	5,220	
Percent	100.0	(47.0)	(1.8)	(51.2)	

COST SHARING BY PURPOSE AND ITEM

	Flood Prevention			Recreation-F&W			Municipal-Other			Total		
	PL-566	Other	Total	PL-566	Other	Total	PL-566	Other	Total	PL-566	Other	Total
Spec. Cost Const.								10,000	10,000		10,000	10,000
								(100.0)	(100.0)		(100.0)	(100.0)
Eng.								1,000	1,000		1,000	1,000
Land Rights (flowage)		27,000	27,000					(100.0)	(100.0)		(100.0)	(100.0)
		(100.0)	(100.0)								(100.0)	(100.0)
Subtotal												
Joint Cost Const.	1,159,900		1,159,900	631,800	631,800	1,263,600		44,500	44,500	1,791,700	676,300	2,468,000
	(47.0)		(47.0)	(25.6)	(25.6)	(51.2)		(1.8)	(1.8)	(72.6)	(27.4)	(100.0)
Eng.	208,600		208,600	227,300		227,300		8,100	8,100	435,900	8,100	444,000
	(47.0)		(47.0)	(51.2)		(51.2)		(1.8)	(1.8)	(98.2)	(1.8)	(100.0)
Land Rights Fee Title				722,200	722,300	1,444,500		29,500	29,500	722,200	751,800	1,474,000
				(49.0)	(49.0)	(98.0)		(2.0)	(2.0)	(49.0)	(51.0)	(100.0)
Legal Sur.					19,600	19,600		400	400		20,000	20,000
					(98.0)	(98.0)		(2.0)	(2.0)		(100.0)	(100.0)
Subtotal												
Total	1,368,500	27,000*	1,395,500	1,581,300	1,373,700	2,955,000		93,500	93,500	2,949,800	1,494,200	4,444,000
Av. Ann Cost	xxx	xxx		xxx	xxx		xxx	xxx		xxx	xxx	
Av. Ann	xxx	xxx		xxx	xxx		xxx	xxx		xxx	xxx	

Example - Cost Allocation - Cost Sharing

(Flood Prevention - Recreation - Municipal Water Supply)

A. Estimated Cost: (Multiple-purpose Structure #2)

	<u>Computed</u>	<u>Used</u>
Construction		
Joint	\$2,467,542	\$2,468,000
Specific (MWS, tower and outlet)	9,675	10,000
Engineering		
Joint	443,700	444,000
Specific	970	1,000
Land Rights		
Lands	1,473,769	1,474,000
Legal, survey, etc.	20,000	20,000
Specific (flowage)	26,785	27,000
Total		\$4,444,000

B. Basis for Allocation of Joint Construction and Engineering Costs
(Use-of-facilities Method)Capacity by Purpose in Acre-Feet^{1/}

For:	<u>Flood Prevention</u>	<u>Municipal Water Supply</u>	<u>Recreation</u>	<u>Total</u>
Sediment	60			60
Floodwater	4,740			4,740
Municipal water supply		180		180
Recreation			5,220	5,220
Total	<u>4,800</u>	<u>180</u>	<u>5,220</u>	<u>10,200</u>
Percent computed	(47.059)	(1.765)	(51.176)	(100)
Percent used	47.0	1.8	51.2	100

^{1/} Rounded capacities from basic data.C. Basis for Allocation of Costs for Land Rights

Lands in Fee Title and Relocation or Modification of Facilities

1. Lands required for reservoir, dam, construction zone, perimeter access, recreation facilities, and access road (obtained in fee title) -1,000 ac
2. Area between top of recreation pool and top of water supply pool - 20 ac
3. Area associated with recreation and flood prevention purpose - 980 ac
4. Allocation percentages
 - Percentage allocated to municipal water storage - 2.0%
 - Percentage allocated as specific cost to recreation -98.0%

Flowage, legal fees, survey, etc.

All of the costs for flowage easements, \$27,000 are specific costs associated with the flood prevention purpose. Legal, survey fees, and other costs, \$20,000, are not subject to cost sharing but may be allocated to purpose on the same basis as costs for lands.

Example - Cost Allocation - Cost Sharing (continued)D. Basis for Sharing Cost

Construction Cost

1. Joint

$$a. \text{ P.L. 566 \% } = 47.0 + (.50 \times 51.2) = 72.6\%$$

$$b. \text{ Other \% } = (.50 \times 51.2) + 1.8 = 27.4\%$$

2. Specific (for municipal water supply)

$$\text{Other \%} = 100.0\%$$

Engineering

1. Joint

$$a. \text{ P.L. 566 \% } = 47.0 + 51.2 = 98.2\%$$

$$b. \text{ Other \% } = 1.8 = 1.8\%$$

2. Specific (for municipal water supply)

$$\text{Other \%} = 100.0\%$$

Land Rights

1. Cost of lands in fee simple title

$$a. \text{ P.L. 566 \% } = .50 \times 98.0 = 49.0\%$$

$$b. \text{ Other \% } = (.50 \times 98.0) + 2.0 = 51.0\%$$

2. Legal survey, etc.

$$\text{Other \%} = 100.0\%$$

3. Flowage (for flood prevention)

$$\text{Other \%} = 100.0\%$$

Example - Cost Allocation - Cost Sharing (continued)E. Sharing of Cost:

	<u>P.L. 566</u>	<u>Other</u>	<u>Total</u>
Construction			
* Joint	(\$1,791,768) \$1,791,700 (72.6)	(\$676,232) \$ 676,300 (27.4)	\$2,468,000
Specific		10,000 (100.0)	10,000
Engineering			
Joint	(436,008) 435,900 (98.2)	(7,992) 8,100 (1.8)	444,000
Specific		1,000 (100.0)	1,000
Land Rights			
Lands	(722,260) 722,200 (49.0)	(751,740) 751,800 (51.0)	1,474,000
Legal, survey, etc.		20,000 (100.0)	20,000
Flowage		<u>27,000 (100.0)</u>	<u>27,000</u>
Total	\$2,949,800	\$1,494,200	\$4,444,000

Example - Cost Allocation - Cost Sharing (continued)

F. Allocation and Sharing by Purpose (dollars)

Cost Classification	Flood Prevention			Recreation			MWS	Grand Total
	PL-566	Other	Total	PL-566	Other	Total	Other	
Construction Cost			(1,159,960)			(1,263,616)	(44,424)	
Joint	1,159,900 (47.0)		1,159,900 (47.0)	631,800 (25.6)	631,800 (25.6)	1,263,600 (51.2)	44,500 (1.8)	2,468,000 (100.0)
Specific							10,000 (100.0)	10,000 (100.0)
Engineering			(208,680)			(227,328)	(7,992)	
Joint	208,600 (47.0)		208,600 (47.0)	227,300 (51.2)		227,300 (51.2)	8,100 (1.8)	444,000 (100.0)
Specific							1,000 (100.0)	1,000 (100.0)
Land Rights						(1,444,520)	(29,480)	
Lands				722,200 (49.0)	722,300 (49.0)	1,444,500 (98.0)	29,500 (2.0)	1,474,000 (100.0)
Legal, Survey and other					19,600 (98.0)	19,600 (98.0)	400 (2.0)	20,000 (100.0)
Flowage		27,000 (100.0)	27,000 (100.0)					27,000 (100.0)
Total	1,368,500	27,000	1,395,500	1,581,300	1,373,700	2,955,000	93,500	4,444,000

EXAMPLE - TABLE 2 - ESTIMATED STRUCTURAL COST DISTRIBUTION

(Dollars)^{1/}

Item	Installation Cost PL-566 Funds				Installation Cost - Other Funds				Total Install. Cost
	Construction	Engi- neering	Land Rights	Total PL-566	Construction	Engi- neering	Land Rights	Total Other	
Floodwater Retard- ing Structure No. 1	602,000	108,000	-	710,000	-		80,000	80,000	790,000
Multiple-purpose Structure No. 2	1,791,700	435,900	722,200	2,949,800	676,300	8,100	798,800 ^{3/}	1,483,200 ^{3/}	4,433,000
Water Intake Tower					10,000	1,000		11,000	11,000
Recreational Facilities	508,000	5,000	-	513,000	508,000	200,000 ^{2/}	-	708,000	1,221,000
Channel Improve- ment	342,000	61,600	-	403,600	-	-	47,400	47,400	451,000
Subtotal	3,243,700	610,500	722,200	4,576,400	1,194,300	209,100	926,200	2,329,600	6,906,000
Project Adm.				430,000				260,000	690,000
Grand Total	3,243,700	610,500	722,200	5,006,400	1,194,300	209,100	926,200	2,589,600	7,596,000

^{1/} Price base: 1970 prices

^{2/} For engineering services to be provided by sponsor's staff

^{3/} Includes \$20,000 for survey, legal fees and other costs and \$27,000 for flowage easements

Date: June 1970

(Dollars)^{1/}

C O S T A L L O C A T I O N					C O S T S H A R I N G							
PURPOSE					P.L. 566				OTHER .			
	Flood Prevention	Rec.	Munic. Water Storage	Total	Flood Prevent.	Rec.	Munic. Water Stor.	Total	Flood Prevent.	Rec.	Munic. Water Stor.	Total
Floodwtr. Retarding Strucutre No. 1	790,000			790,000	710,000		-	710,000	80,000			80,000
Multiple- purpose Structure No. 2	1,395,500	2,955,000	82,500	4,433,000	1,368,500	1,581,300	-	2,949,800	27,000	1,373,700	82,500	1,483,200
Tower & Outlet			11,000	11,000							11,000	11,000
Rec. Facil.		1,221,000		1,221,000		513,000	-	513,000		708,000		708,000
Channel Improve- ment	451,000			451,000	403,600			403,600	47,400			47,400
GRAND TOTAL	2,636,500	4,176,000	93,500	6,906,000	2,482,100	2,094,300	-	4,576,400	154,400	2,081,700	93,500	2,329,600

Price Base: 1970 Prices

Date: June 1970

TABLE 3 - STRUCTURE DATA

FLOODWATER RETARDING STRUCTURES AND WATER SUPPLY RESERVOIRS

David Creek Watershed, Middlestate

Item	Unit	Desirable Range
Class of structure		
Drainage area	Sq. Mi.	Tenths
Controlled	Sq. Mi.	"
Curve No. (1-day) (AMC II)		Whole Number
T	Hours	Tenths
Elevation top of dam	Feet	"
Elevation crest emergency spillway	Feet	"
Elevation crest high stage inlet	Feet	"
Elevation crest low stage inlet	Feet	"
Maximum height of dam	Feet	Whole Number
Volume of fill	Cu. Yds.	1000 - 100
*Total capacity ^{1/}	Ac. Ft.	10 - 10
Sediment submerged 1st 50 years	Ac. Ft.	10 - 1
Sediment submerged 2nd 50 years	Ac. Ft.	10 - 1
Sediment aerated	Ac. Ft.	10 - 1
Beneficial use (identify use)	Ac. Ft.	10 - 5
Retarding	Ac. Ft.	10 - 5
Between high and low stage	Ac. Ft.	10 - 5
Surface area		
Sediment pool	Acres	10 - 1
Beneficial use pool (identify use)	Acres	10 - 1
Retarding pool	Acres	10 - 1
Principal spillway		
Rainfall volume (areal) (1-day)	Inches	Tenths
Rainfall volume (areal) (10-day)	Inches	"
Runoff volume (10-day)	Inches	"
Capacity of low stage (max.)	cfs.	5 - 1
Capacity of high stage (max.)	cfs.	5 - 1
Frequency operation - emer. spillway	1/2 chance	Whole Number -
Size of conduit	Dim.	Inches or feet & tenths
Emergency spillway		
Rainfall volume (ESH) (areal)	Inches	Tenths
Runoff volume (ESH)	Inches	"
Type		
Bottom width	Feet	10 - 1
Velocity of flow (V_e)	Ft./Sec.	Tenths
Slope of exit channel	Ft./Ft.	"
Maximum water surface	Feet	"
Freeboard		
Rainfall volume (FH) (areal)	Inches	"
Runoff volume (FH)	Inches	"
Maximum water surface elevation	Feet	"
Capacity Equivalents		
Sediment volume	Inches	"
Retarding volume	Inches	"

^{1/} The elements making up the total capacity
can usually be rounded into range indicated.

Date: June 1970

EXAMPLE - TABLE 4 - ANNUAL COST

(Dollars)^{1/}

Evaluation Unit	Amortization of Installation Cost ^{2/}	Operation and Maintenance Cost	Total
Floodwater Retarding Structure and Channel Improvement	64,100	5,500	69,600
Multiple-purpose Structure and Recreation Facilities	293,300	121,300 ^{3/}	414,600
Project Administration	35,600	xxx	35,600
GRAND TOTAL	393,000	126,800	519,800

^{1/} Price Base: Installation cost - 1970 prices, O&M in 1969
Adjusted Normalized Prices.

^{2/} 100 years @ 5 1/8 percent. (0.05160)

^{3/} Includes \$114,800 for operation, maintenance and replacement of the recreational development.

Date: June 1970

WORK SHEET FOR TABLE 4
and Values Needed in the Narrative of the Plan

OPERATION, MAINTENANCE AND REPLACEMENT

F.W.R.S.		
\$4,468 (computed) x 0.79 (a.n.p.)	=	\$ 3,530
	Use	<u>\$ 3,500</u>
Channel Improvement		
\$2,513 (computed) x 0.79 (a.n.p.)	=	\$ 1,985
	Use	<u>\$ 2,000</u>
M.P. Structure		
Dam, Spillway and Appurtenances -		
\$6,171 (computed) x 0.79 (a.n.p.)	=	\$ 4,875
	Use	<u>\$ 4,900</u>
Outlet Works and M.W.S.		
\$2,000 (computed) x 0.79 (a.n.p.)	=	\$ 1,580
	Use	<u>\$ 1,600</u>
Reservoir for Recreation		
\$3,000 (computed) x 0.79 (a.n.p.)	=	\$ 2,370
	Use	<u>\$ 2,400</u>
Subtotal M.P.S.		\$ 8,900
Recreation Facilities		
\$142,289 (computed) x 0.79 (a.n.p.)	=	\$ 112,408
	Use	<u>\$ 112,400</u>
a.n.p. - adjusted normalized price		

AMORTIZATION OF INSTALLATION COST

F.W.R.S.		
\$790,000 x .05160	=	\$ 40,764
	Use	<u>\$ 40,800</u>
Channel Improvement		
\$451,000 x .05160	=	\$ 23,272
	Use	<u>\$ 23,300</u>
M.P. Structure		
\$4,444,000 x .05160	=	\$ 229,310
	Use	<u>\$ 229,300</u>
Recreation Facilities		
\$1,221,000 x .05160	=	\$ 63,004
	Use	<u>\$ 64,000</u>

EXAMPLE - TABLE 5 - ESTIMATED AVERAGE ANNUAL FLOOD DAMAGE REDUCTION BENEFITS

(Dollars)^{1/}

Item	Estimated Average Annual Damage		Damage Reduction Benefit
	Without Project	With Project	
Floodwater			
Crop and Pasture	12,600	600	12,000
Other Agricultural	6,800	800	6,000
Nonagricultural (list important items)	125,000	1,000	124,000
Subtotal	144,400	2,400	142,000
Sediment			
Overbank Deposition	5,500	500	5,000
Reservoirs	400	100	300
Other (list important items)	1,000	100	900
Subtotal	6,900	700	6,200
Erosion			
Flood Plain Scour	480	50	430
Streambank	100	80	20
Gullies	200	50	150
Subtotal	780	180	600
Indirect	22,800	500	22,300
TOTAL	174,880	3,780	171,100

1/ Price base: 1970 adjusted normalized prices

Date: June 1970

(Dollars)

Evaluation Unit	AVERAGE ANNUAL BENEFITS ^{1/}						Total	^{3/} Average Annual Cost	Benefit Cost Ratio
	Damage Reduction	More Intensive Land Use	Changed Land Use -Urban	Recreation	Municipal Water Supply	Second- ary			
Floodwater Retarding Structure #1 and Channel Improvement	92,000	1,000	1,500	-	-	7,900	100,900	69,600	1.4:1
Multiple- purpose Structure and Recreation Facilities	72,000	-	-	800,000	7,000	86,700	965,700	414,600	2.3:1
Project Admini- stration	xxx	xxx	xxx	xxx	xxx	xxx	xxx	35,600	xxx
GRAND TOTAL	164,000 ^{2/}	1,000	1,500	800,000	7,000	94,600	1,066,600	519,800	2.1:1

^{1/} Price base: 1970 adjusted normalized prices.

^{2/} In addition, it is estimated that land treatment measures will provide flood damage reduction benefits of \$7,100 annually.

^{3/} From Table 4.

Date: June 1970

1. Except as hereinafter provided, the Sponsoring Local Organization will acquire without cost to the Federal Government such land rights as will be needed in connection with the works of improvement. (Estimated Cost \$1,648,400). The percentages of this cost to be borne by the Sponsoring Local Organization and the Service are as follows:

<u>Works of Improvement</u>	<u>Sponsoring Local Organizations (percent)</u>	<u>Service (percent)</u>	<u>Estimated Land Rights Cost (dollars)</u>
Multiple-purpose Structure No. and Recreational Facilities			
Payment to land-owners for about 1,000 acres	51.0	49.0	1,474,000
Legal fees, survey costs, flowage easements, and other	100.0	0.0	47,000
All other structural measures	100.0	0.0	127,400

The Sponsoring Local Organization agrees that all land acquired or improved with P.L. 566 financial or credit assistance will not be sold or otherwise disposed of for the evaluated life of the project except to a public agency which will continue to maintain and operate the development in accordance with the Operation and Maintenance Agreement.

2. The Sponsoring Local Organization will acquire or provide assurance that land-owners or water users have acquired such water rights pursuant to State law as may be needed in the installation and operation of the works of improvement.
3. The percentages of construction costs of structural measures 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>
Floodwater Retarding Structure No. 1	0.0	100.0	602,000
Multiple-purpose Structure No. 2	27.4	72.6	2,468,000

3. (Continued)

<u>Works of Improvement</u>	<u>Sponsoring Local Organization (percent)</u>	<u>Service (percent)</u>	<u>Estimated Construction Cost (dollars)</u>
Water Intake Tower	100.0	0.0	10,000
Recreational Facilities	50.0	50.0	1,016,000
Channel Improvement	0.0	100.0	342,000

4. The percentages of the 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 Costs (dollars)</u>
Floodwater Retarding Structure No. 1	0.0	100.0	108,000
Multiple-purpose Structure No. 2	1.8	98.2	444,000
Water Intake Tower	100.0	0.0	1,000
Recreational Facilities			
Erosion Control Practices	0.0	100.0*	5,000
All other facilities	100.0	0.0	200,000
Channel Improvement	0.0	100.0	61,600

*Assuming prior approval granted by Administrator. See item "e" under Explanatory Note, page 113.40-4 of W.P.H.

5. The Sponsoring Local Organization and the Service will each bear the costs of Project Administration which it incurs, estimated to be \$260,000 and \$430,000, respectively.