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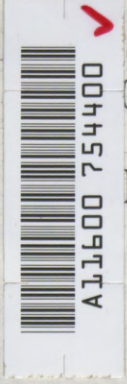
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# AMENDING THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT

GOVERNMENT  
Storage

DOCUMENTS

JAN 27 1976



HEARING  
BEFORE THE  
COMMITTEE ON WATER RESOURCES  
OF THE  
COMMITTEE ON PUBLIC WORKS  
UNITED STATES SENATE  
NINETY-FOURTH CONGRESS

FIRST SESSION

ON

**S. 1224**

A BILL TO AMEND THE WATERSHED PROTECTION AND  
FLOOD PREVENTION ACT, AS AMENDED  
AND

THE FOLLOWING PENDING WATERSHED WORK PLANS :

- CANBY CREEK, MINN.
- LEONA RIVER, TEX.
- LITTLE LUCKIAMUTE RIVER, OREG.
- MCCLELLAN CREEK, TEX.
- PALUXY RIVER, TEX.
- RABON CREEK, S.C.
- RED DEER CREEK, TEX.
- SAN FELIPE CREEK, TEX.
- SAND CREEK, TEX.

OCTOBER 3, 1975

SERIAL NO. 94-H26

Printed for the use of the Committee on Public Works

U.S. GOVERNMENT PRINTING OFFICE

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# CONTENTS

Burdick, Hon. Quentin N., U.S. Senator from the State of North Dakota, opening statement of-----	Page 1
---	-----------

## LIST OF WITNESSES

Barlow, Thomas J., Natural Resources Defense Council-----	24, 33
Prepared statement-----	92
Bellmon, Hon. Henry, U.S. Senator from the State of Oklahoma-----	29
Blackwelder, Brent, Washington representative, Environmental Policy Center-----	256
Prepared statement-----	258
Corning, Raymond, Virginia Commission of Inland Game Fisheries-----	39
Supplementary statement-----	40
Haas, Joseph W., Deputy Administrator for Water Resources, Soil Con- servation Service, U.S. Department of Agriculture, accompanied by James Kincannon-----	15, 154
Harbison, Robert B., Lugert-Altus Irrigation District, Altus, Okla-----	104
Johnson, Fred, water resources coordinator, Pennsylvania Fish Commis- sion-----	79
Prepared statement-----	80
Robbins, Edwin M., president, Mississippi Association of Soil and Water Conservation Districts, Shannon, Miss-----	113
Prepared statement-----	116
Roesler, Leon, landowner, Cass County, N. Dak-----	9
Smith, Randolph, chairman, State Water Improvement Commission for Little Luckiamute, Dallas, Ore-----	251
Prepared statement-----	252
Thurmond, Hon. Strom, U.S. Senator from the State of South Carolina-----	31
Tower, Hon. John G., U.S. Senator from the State of Texas-----	100
Vaccaro, Victor, flood control contract officer, Broome County, N.Y-----	131
Prepared statement-----	132

## ADDITIONAL MATERIAL

S. 1224, reprint of-----	2
Statements:	
Eastland, Hon. James O., U.S. Senator from the State of Mississippi---	4
Stennis, Hon. John C., U.S. Senator from the State of Mississippi-----	6
Watershed projects:	
Canby Creek, Minn.:	
Humphrey, Hon. Hubert H., and Hon. Walter F. Mondale, U.S. Senators from the State of Minnesota, joint letter from-----	156
Soil Conservation Service:	
Statement-----	154
Responses to additional questions-----	157
Leona River, Tex.:	
Soil Conservation Service:	
Statement-----	160
Responses to additional questions-----	163
Statements:	
Bentsen, Hon. Lloyd, U.S. Senator from the State of Texas---	161
Briscoe, Hon. Dolph., Governor, State of Texas-----	169
Tower, Hon. John, U.S. Senator from the State of Texas-----	101

## IV

Little Luckiamute, Oreg. :	
Communications :	Page
Johnson, J. Morris-----	170
Mid Willamette Valley Resource Conservation and Development Area-----	170
Spring, L-----	171
McCorkle, David V-----	171
Soil Conservation Service :	
Statement-----	170
Responses to additional questions-----	172
McClellan Creek Tex. :	
Soil Conservation Service :	
Statement-----	179
Responses to additional questions-----	191
Statements :	
Bartlett, Hon. Dewey, U.S. Senator from the State of Oklahoma-----	30
Bentsen, Hon. Lloyd, U.S. Senator from the State of Texas--	179
Lugert-Altus Irrigation District, Altus, Okla-----	112
Luscumbe, James A. Sr., interstate compact coordinator, Texas Water Rights Commission-----	181
Tower, Hon. John, U.S. Senator from the State of Texas----	103
Paluxy River, Tex. :	
Soil Conservation Service :	
Statement-----	202
Responses to additional questions-----	204
Statements :	
Bentsen, Hon. Lloyd, U.S. Senator from the State of Texas--	203
Tower, Hon. John, U.S. Senator from the State of Texas----	102
Rabon Creek, S.C. :	
Soil Conservation Service :	
Statement-----	209
Responses to additional questions-----	210
Red Deer Creek, Tex. :	
Soil Conservation Service :	
Statement-----	215
Responses to additional questions-----	218
Statements :	
Bentsen, Hon. Lloyd, U.S. Senator from the State of Texas--	216
Tower, Hon. John, U.S. Senator from the State of Texas----	102
San Felipe Creek, Tex. :	
Soil Conservation Service :	
Statement-----	226
Responses to additional questions-----	230
Statements :	
Bentsen, Hon. Lloyd, U.S. Senator from the State of Texas--	227
Tower, Hon. John, U.S. Senator from the State of Texas----	102
Sand Creek, Kans. :	
Soil Conservation Service :	
Statement-----	238
Responses to additional questions-----	243
Statements :	
Dole, Hon. Bob, U.S. Senator from the State of Kansas-----	239
Pearson, Hon. James B., U.S. Senator from the State of Kansas-----	241

## AMENDING THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT

FRIDAY, OCTOBER 3, 1975

U.S. SENATE,  
COMMITTEE ON PUBLIC WORKS,  
SUBCOMMITTEE ON WATER RESOURCES,  
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to call, in room 4200, Dirksen Senate Office Building, Hon. Quentin N. Burdick presiding. Present: Senators Burdick, Stafford, and Domenici.

### OPENING STATEMENT OF HON. QUENTIN N. BURDICK, U.S. SENATOR FROM THE STATE OF NORTH DAKOTA

Senator BURDICK. Good morning, ladies and gentlemen. Senator Gravel has asked me to express his sincere regret that an unexpected medical problem has prevented his attendance here this morning.

I am delighted to be able to begin this hearing this morning. The agenda consists of a pending bill, S. 1224, and nine pending watershed work plans which have been sent up by the administration.

S. 1224 amends the Watershed Protection and Flood Prevention Act in order to remove the existing monetary limitation of \$300,000 on emergency projects in an individual watershed in any one year. The bill also establishes an emergency fund to be used for such emergency measures for runoff retardation and soil-erosion prevention.

Such measures are to be undertaken in order to safeguard lives and property from floods and erosion when flood or other natural forces have caused impairment of that watershed.

Senator Eastland, the principal sponsor of this measure, is unable to attend the hearing this morning, but has submitted a written statement for the record. Senator Stennis has also sent testimony. I ask that both these statements be included in the record at this point.

[The bill, S. 1224, and Senator Eastland's and Senator Stennis' statements follow:]

94TH CONGRESS  
1ST SESSION

# S. 1224

---

## IN THE SENATE OF THE UNITED STATES

MARCH 18 (legislative day, MARCH 12), 1975

MR. EASTLAND (for himself, MR. ALLEN, MR. CURTIS, MR. LEAHY, MR. MCGOVERN, and MR. STENNIS) introduced the following bill; which was read twice and referred to the Committee on Public Works

---

## A BILL

To amend the Watershed Protection and Flood Prevention Act,  
as amended.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That section 216 of the Flood Control Act of 1950 is  
4       amended by striking out the colon preceding the proviso and  
5       inserting a period in lieu thereof and by striking out the pro-  
6       visio and inserting in lieu thereof the following: "There is  
7       authorized to be established and maintained an emergency  
8       fund, to remain available until expended, for use by the Sec-  
9       retary in carrying out emergency works of improvement or  
10       measures pursuant to this section, and there is further au-  
11       thorized the appropriation of such sums as the Congress may

3

2

- 1 determine necessary for the initial establishment of this fund
- 2 and for its replenishment from time to time.”.

HERMAN E. TALMADGE, GA., CHAIRMAN  
 JAMES O. EASTLAND, MISS.      CARL T. CURTIS, NEBR.  
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 WALTER D. HUDDLESTON, KY.      HENRY BELLMON, OKLA.  
 DICK CLARK, IOWA                  JESSE HELMS, N.C.

COTYS M. MOUSER, CHIEF CLERK

## United States Senate

COMMITTEE ON  
 AGRICULTURE AND FORESTRY  
 WASHINGTON, D.C. 20510

October 2, 1975

Senator Mike Gravel  
 Chairman  
 Subcommittee on Water Resources  
 Senate Public Works Committee  
 United States Senate  
 Washington, D. C. 20510

Dear Mike:

I am sorry my schedule prevents me from appearing, in person, before your Committee in support of S. 1224. I appreciate very much your holding hearings to determine the need for the new approach in this bill to funding emergency flood control activities under the authorities of Section 216.

Section 216 has enabled the Soil Conservation Service to assist private landowners, communities and other federal agencies to repair damage done by floods across the nation. It is not regional in its application though the areas of high rainfall are more susceptible and in need of this amendment.

I shall not burden the Committee with a long history of accomplishments under this Section, but I would like to illustrate with a few recent occurrences.

In 1973, Hurricane Agnes dumped heavy rains over large areas from the Gulf Coast to New York State. Extreme flooding of tributary and main stem streams occurred in the lower Mississippi River Valley States, West Virginia, Pennsylvania, New Jersey and New York. Months later, in a supplemental appropriation bill, the Congress provided \$20 million for repairs to streams and flood prevention facilities. In 1974, the rains continued and damages increased while an additional supplemental bill crept through Congress. If money had been available to begin work immediately following the occurrences, we could have limited the damage at less cost.

I am delighted that Senator Young exercised leadership this year, following the floods in the Red River Valley, to insert \$31 million in the regular appropriation bill to cover these damages, those occurring in Montana, Idaho and other states, and to finish the work in the lower Mississippi River Valley States. His action, with the concurrence of the Congress, will buy needed time over the present law of requesting supplemental appropriations after the flooding.

This bill offers an even better approach. It enables the Congress to have the funds available in a revolving fund when the flooding damage occurs. Work can begin immediately. Stream beds can be cleared of debris that would retard the runoff of later rains. Banks can be stabilized before additional caving silts the channel. Structures can be repaired to prevent flood flows from destroying crops and homes in rural and urban areas. Much of this work could be done before the administration would make a request and a supplemental appropriation bill work its way through Congress.

This bill will save money. With it, we can treat the "cold" before it develops into "pneumonia" from neglect. The revolving fund would not be spent except under the same conditions as the current law. It will reduce flood losses to the property owner and local community as well as the Federal Government. It would be nice to have the fund now to cope with the problems created by the heavy rains in Alabama and Georgia last month by Hurricane Eloise. This damage can't be touched until next year.

The bill leaves the size of the revolving fund up to the Appropriations Committee. It can be big enough to deal with the normal emergency, or at least big enough to start and continue until a supplemental can clear the Congress following a flooding situation.

I hope the Committee will give early and favorable consideration to this bill which, in my judgment, is a better tool than we have at present. I will appreciate your making this letter a part of the hearing record.

With kindest regards,

Sincerely,

*Jim Eastland*

U. S. S.

JOE:TM

STATEMENT TO THE SUBCOMMITTEE ON WATER  
RESOURCES, SENATE PUBLIC WORKS COMMITTEE

by

Senator John C. Stennis  
of  
Mississippi

October 3, 1975

Mr. Chairman and members of the Subcommittee, I appreciate this opportunity to make a statement in support of Senate Bill 1224, of which I am a cosponsor.

S. 1224 would amend Section 216 of the Flood Control Act of 1950 (1) to remove the \$300,000 limitation on expenditures by the Soil Conservation Service for emergency treatment of watersheds which are impaired by storms, fire, earthquake or other natural forces and (2) to authorize establishment and maintenance of a continuing emergency fund.

There are many months of delay experienced under the present law in obtaining funds by supplemental appropriation, following a natural disaster. This encourages the possibility of loss of life and property where impaired watersheds become vulnerable to further damage from normal runoff and wind or a second storm. A timely response would reduce the cost of the emergency work, increase its effectiveness by removing hazardous conditions, and result in action to safeguard life and property at the time of the need.

Urban areas have funding immediately upon declaration of a disaster by the President. Section 216 is the only program available to respond to channel clearing and certain other emergency needs in rural tributary stream areas, and it has been limited in meeting these needs because local residents must await legislative action for funding. As a matter of equity, economics and common sense, a method is needed to provide immediate funding to meet emergency situations in the watershed of rural areas.

In Mississippi over \$5 million of emergency measure needs, considered eligible under Section 216, have been identified resulting from the Spring 1975 storm. Now, over half a year later, approximately \$5,000 of emergency funds have been available to the state for use in evaluating damages and other planning activities. Because of the limitation under Section 216 direct help has not been made available. I believe that you will find that a similar situation exists in many other States where severe storms have occurred this year.

S. 1224 is designed to remove these limits and make the emergency watershed protection work more responsive to the people's need in rural upstream areas. There are precedents for such emergency funds in other water resources programs, and we know that it is a method that will work promptly and effectively.

Mr. Chairman and members of the Subcommittee, I strongly urge that you favorably report this bill, and that it be brought before the Senate for approval at the earliest possible date.

I thank the Subcommittee for the opportunity to make my views known on this very constructive legislative endeavor.

\* \* \* \* \*

Senator BURDICK. For the benefit of those in the audience, the subcommittee will take up S. 1224 first and then move to the nine pending watershed work plans.

Our first witness is Mr. Leon Roesler, landowner from Cass County, N. Dak. I am very pleased to introduce Mr. Roesler. He comes from my home county. He also represents the soil conservation districts. I know him to be very knowledgeable. I welcome him to the committee.

**STATEMENT OF LEON ROESLER, LANDOWNER, CASS COUNTY,  
N. DAK.**

Mr. ROESLER. Mr. Chairman and members of the committee, my name is Leon Roesler. My wife and I and two sons live in the Red River Valley of North Dakota, approximately 3½ miles north of Leonard, which is a small town located in the southwest corner of Cass County. My father has lived and farmed in the Leonard area for some 60 years.

Although we have experienced heavy rainfalls in this area in the past, nothing in either of our experiences can compare to the series of heavy rainstorms that occurred during the period from June 26 to July 5 of this year. Intense rainfalls in excess of 4 or 5 inches in a short period of time are usually confined to small areas, but this storm was unbelievable in the volume and intensity and large area of the southeastern section of North Dakota that it covered.

According to newspaper accounts, the weatherman said that unusual conditions persisted to produce the abnormal amounts of rainfall. I would certainly have to agree with his conclusions.

Although the rains started on June 26, the period of June 28, 29, and 30 had extremely heavy rains in not only the Leonard area, but in LaMoure, southern Barnes, Ransom, Cass, and Richland Counties—10 to 12 inches of rain were common throughout these counties during this 3-day period. An unofficial gage near Leonard registered 20 inches in 3 days. My own gage registered 16 inches over this same period. The yearly average rainfall for my area is 20 inches.

The area lying immediately southwest of my home farm consists of the old Sheyenne delta combined with the sandy beach lines which were formed when the Red River Valley was glacial Lake Agassiz. These areas are quite extensive, covering southwest Cass, northeast Ransom, and northwest Richland Counties.

As the rain continued to fall, water built up and eventually overtopped section-line roads and ridges in the delta area. This caused water to run where it had never run before, resulting in washouts of the roads and ridges. Subsequent cutting resulted in many deep gullies in the high water table silts and sands that comprise the delta and beach lines, depositing the sediment on cropland in the flatter areas lying below the beach lines. The erosion was unbelievable.

Although I have not personally seen all the damaged area, which I understand exist in Minnesota as well as North Dakota, I can testify as to the damage that occurred in the vicinity of my home place.

Near my uncle's farm 1 mile north and 1½ miles west of Leonard, a gully approximately 100 feet wide, ranging in depth from 10 to 20 feet and covering a length of approximately three-fourths of a mile, was created. It was estimated that approximately 250,000 cubic yards

of material was removed from this one gully and deposited on a field below to depths up to 4 feet, covering an area of about 80 acres.

To date, nothing has been done to repair, restore, or stabilize these gullies due to the fact that the Soil Conservation Service does not have funds available under their emergency program. Some roads have been repaired under the emergency program of the Federal Disaster Assistance Administration; however, they do not have authority, as I understand, to work on other public facilities.

There has been some work done under the emergency conservation measures of the Agricultural Stabilization and Conservation Service because of the uncertainty as to when SCS emergency funds would be available. Most of these repairs, however, have not been major since the landowner is required to cost-share on any work done under the ECM program. Major projects would be too costly for the landowner to handle on his own.

In my opinion, if the Soil Conservation Service had had adequate funding for their emergency program, 80 to 90 percent of the stabilization and restoration work that needs to be done could have been completed this construction season.

North Dakota is a great place to live, but we are not blessed with a long growing or a long construction season and there is no possibility, in my estimation, of completing more than a minor segment of the required work in what remains of this construction season.

I dread the thought of what could occur next spring. In my opinion, even with only a normal snowpack, the additional erosion and sediment deposition from next spring's runoff could be tremendous. This could also happen with rains this fall.

My partner and I lost approximately 1,000 acres of crop, and when I look at the gullies where no channels existed before, eroded natural channels, sediment deposits in road ditches, legal drains, and natural watercourses, I still find it hard to believe.

For the record, I would like to enter the following information which I have gleaned mostly from the newspaper, radio, and television accounts: On June 29, Spring Creek in southern Barnes County came up rapidly, causing residents of Kathryn, N. Dak., to vacate their homes early Sunday morning, June 29.

The south branch of the Maple River poured heavy amounts of water into Enderlin, N. Dak., early Sunday morning, making it necessary for some residents to leave everything for higher ground. Many roads and bridges were washed out through the Cheyenne Valley from Kathryn to Lisbon due to the heavy runoff.

As water collected in the nearly level Red River Valley, movement was slow, but much of the area, especially in Cass County, was covered by water with some points being 5 to 8 miles wide.

In our brief history of approximately 100 years, this storm has been termed the "flood of the century." It was termed this because of the large area covered, the amount and intensity of rainfall, and the damage which occurred.

Crop damage as shown in the table below was tabulated by the North Dakota State ASCS office. This table shows 12 counties being affected by the flood. Estimates taken from this show 1,335,848 acres damaged, resulting in losses of \$171,803,963, or \$128 per acre.

This monetary loss and the impact such loss will have on the economy of the affected communities is extremely difficult to measure. Also unknown is how the conditions brought about by the flooding will affect the crops of 1976 and subsequent years.

## CROP DAMAGE

County	Estimated acres lost	Estimated crop loss
Barnes.....	7,000	\$933,549
Cass.....	462,400	62,029,385
Dickey.....	34,900	2,938,000
La Moure.....	34,900	10,414,315
Ransom.....	137,500	22,925,375
Richland.....	402,950	50,466,580
Sargent.....	46,150	5,777,092
Stutsman.....	378	41,990
Grand Forks.....	7,500	1,866,000
Pembina.....	4,700	612,300
Traill.....	35,180	5,062,557
Walsh.....	42,290	8,736,720
Total.....	1,335,848	171,803,963

While it is not common to have 4, 5, or 6 inches of rainfall in North Dakota this late in the season, I dread to think what the consequences of such an event would be on these exposed gullies. Although it is possible that we will have below normal snows and snow melts and also the possibility of rainfall occurring during or shortly after the snow-melt period in the spring of 1976.

What could be the result of delaying the corrective action? In the spring, runoff resulting from a melting normal snowpack will further erode the damaged water courses, increase the damage to water control structures, and deposit additional sediment.

Numerous damages which result from sediment deposition are (1) burial of fertile soils by less fertile sediment, (2) damage to growing crops and burial of crops, (3) filling of channels causing more frequent flooding, increased flood heights, and possible rerouting of watercourses, (4) ditches and road grades filled to a degree where re-grading is needed to provide drainage, and (5) pollution of rivers and streams. More frequent flooding also increases the bacteriological problems, mainly contamination of water supplies, and provides breeding places for mosquitoes.

In conclusion, I would like to say that if Senate Bill 1224 had been in effect and an adequate amount of money had been in the revolving fund for use by the Secretary, it is my opinion that 80 to 90 percent of the renovation, stabilization, and other necessary works in the entire damage area could have been completed during this season.

Thank you.

Senator BURDICK. Thank you, Mr. Roesler, for your contribution this morning.

You appear here as an individual farmer having suffered loss. You also appear as a representative of the Soil Conservation Districts organization in North Dakota?

Mr. ROESLER. That is right.

Senator BURDICK. They have authorized you to speak for them to this extent?

Mr. ROESLER. That is right.

Senator BURDICK. Your estimate of losses are not only impressive, but appalling. I might say, I have seen some of those losses myself not only from the ground, but from the air. I can verify what you said personally.

Mr. ROESLER. This is true. The way we stand right now, some of these losses will also occur again next year because we are wide open. With even normal rainfalls, we are going to have more.

Senator BURDICK. You say because of lack of authority under the law, you are not going to get much of it done this fall?

Mr. ROESLER. I see very little. The major projects where most of the problems are, there will be nothing done this fall.

Senator BURDICK. So that the members of the subcommittee understand what the problem is, this Red River Valley is a very fertile flat valley composed of black soil. Whenever it has excessive water, erosion takes place rapidly.

Mr. ROESLER. That is right, and it continues to get worse. The longer this stays open, the more it will destroy.

Senator BURDICK. You think the bill would enable citizens to restructure their land in some way?

Mr. ROESLER. I think so.

Senator BURDICK. You have no objection to the cost sharing features and the ratios there?

Mr. ROESLER. No; I don't.

Senator BURDICK. You just want to be able to go on?

Mr. ROESLER. That is right.

Senator BURDICK. Your figure of \$171-million damage, is that just for 1 year?

Mr. ROESLER. This was just for this past spring.

Senator BURDICK. For what area?

Mr. ROESLER. This area, the small area.

Senator BURDICK. Southern Cass?

Mr. ROESLER. Southern Cass, some of Barnes and Ransom Counties.

Senator BURDICK. The counties of the south?

Mr. ROESLER. Right.

Senator BURDICK. One of the staff members wanted to know if any major flood control structures could help in this case?

Mr. ROESLER. In this area here, there could be some small retention structures probably, although SCS, without having money available, they haven't really had a chance to go out and really spend much money or survey the area to decide what could possibly be done.

They are waiting to find out for sure what kind of money they will have to work with.

Senator BURDICK. One of the problems with the area, I shall repeat, is it is a flat, very flat area. There is very little reservoir space and small retention is about the only mechanical way it could be solved. Do you agree?

Mr. ROESLER. That is right.

Senator BURDICK. Small retention structures might alleviate some of the problems?

Mr. ROESLER. Oh, yes.

Senator BURDICK. This would be in the watershed areas?

Mr. ROESLER. Right.

Senator BURDICK. The Senator from the great State of New Mexico? Senator DOMENICI. We have similar problems, although we are not flat, as you know, Mr. Chairman.

Mr. Roesler, I notice you are here individually and also representing districts. If the questions I ask you are technical, we have some technical people that will answer them. Let me see if I can get this straight in my head.

First of all, the bill that we are considering concerns itself with emergency measures. We start with that premise. We are not talking about anything other than emergency measures for runoff preservation and soil erosion prevention. You are not suggesting that we change that thrust, are you?

Mr. ROESLER. No; I am not.

Senator DOMENICI. Under the present bill, according to what I have seen, and it is for 1975, we spent \$25,753,000. I have the figures for the previous years. I would just like to make them a part of the record.

Senator BURDICK. Received without objection.

[The figures referred to follow:]

DIRECT FLOOD EMERGENCY FUNDS (SOIL CONSERVATION SERVICE ONLY)

Allottee office	Fiscal year—				
	1971 <sup>1</sup>	1972 <sup>1</sup>	1973 <sup>1</sup>	1974 <sup>1</sup>	1975 <sup>1</sup>
Alabama.....				350,563	458,838
Arkansas.....				1,220,670	1,571,330
Georgia.....				99,264	35,736
Idaho.....		1,302			325,000
Iowa.....			17,605		
Kentucky.....				440,273	414,727
Louisiana.....				4,801	38,199
Maryland.....			376,676	385,152	509
Minnesota.....			41,251	288	67,381
Mississippi.....				3,326,747	11,673,253
Missouri.....				5,611,238	5,378,762
Montana.....					50,000
Nevada.....				10,027	2,067
New Mexico.....					180,950
New York.....			2,535,151	4,138,983	545,458
North Dakota.....				1,904	748,096
Oregon.....				46,710	3,806,290
Pennsylvania.....			1,634,975	1,964,741	225,043
South Dakota.....			728,826	100,804	
Tennessee.....				490,897	630,103
Vermont.....				163,322	601,506
Virginia.....	1,491,000	61,504	490,945	539,922	
Washington.....	129,943				
West Virginia.....		157,838	4,034		
Total.....	1,620,943	220,644	5,829,463	18,896,306	25,753,248

<sup>1</sup> Allotments for fiscal year 1975; expenditures for other years.

Senator DOMENICI. Are you suggesting to us that if we had more money than the \$25 million, that we might be able to help with some of the things that we couldn't help in your State, still within the purview of emergency restoration?

Mr. ROESLER. Yes; I am saying that. Also though, I understand that the \$300,000 that carried with this bill to start with, it takes too long for us in that short construction season to come back and get this additional money.

It sets our schedule back too far. Our damages just keep growing because it is another year with nothing fixed or restored and it just makes it worse.

Senator DOMENICI. You have to explain that again to me. Are you suggesting that a \$300,000 limit is a serious impediment in the existing bill?

Mr. ROESLER. I feel instead of the \$300,000, it should be a higher limit than that; that there is money available in a revolving fund, that the machine could start working.

Senator DOMENICI. You are supporting two thrusts, if I understand it, that we obviously don't have enough money in total, and that the \$300,000 limitation is an impediment to getting the kind of work done that is needed?

Mr. ROESLER. That is right.

Senator DOMENICI. You are aware that we have a national disaster law. The word emergency is in some way related to disaster, either existing or pending.

Do you believe that we ought to have somebody declare a disaster or should we just have this big revolving fund and let SCS determine whether it is an emergency and how much to spend?

Mr. ROESLER. No. I think there should be some control. Someone should have some controls over when to designate these disaster areas; but when they are so designated, I think there should be adequate funding for the SCS to start things in motion.

Senator DOMENICI. This kind of work is done on private land, is it not? Could be?

Mr. ROESLER. Could be, but not in all cases. It is also public lands.

Senator DOMENICI. So that we could be making improvements to both public and private lands under this bill?

Mr. ROESLER. That is right.

Senator DOMENICI. If we have no limitation, then we could be making improvements up to any amount. That could be a \$10 million project: is that right, if there is enough money?

Mr. ROESLER. No. I am not saying that there should be no limitation on how much money we are going to spend. I think that there should be money available to restore what mother nature did, whether it be on private land or public lands.

This would have to be determined by, not the landowner, it has got to be someone through an organization who has the engineering knowledge of how to restore it and what it would cost to restore it.

Senator DOMENICI. Assuming we did that, we use your kinds of limiting factors, Congress would not have any say so as far as the cost of the given project; it would be up to the Secretary of Agriculture, or are you suggesting that \$300,000 should be changed to \$500,000 or \$1 million?

Mr. ROESLER. Yes, I am suggesting—I am getting a little mixed up here. Instead of, for example, \$300,000, maybe a ceiling should be set at \$10 million or something like that. I believe there has to be a ceiling on it. Somewhere it has to be regulated.

But I think that \$300,000 with the inflation that has set in and so forth over the past year, that \$300,000 doesn't go near as far as it did when this was first started. It just can't get things moving.

Senator DOMENICI. Thank you, very much.

Thank you, Mr. Chairman.

Senator BURDICK. Mr. Roesler, under the legislation proposed by Mr. Eastland and other Senators, S. 1224, there is established in

lieu of the \$300,000 ceiling what is known as an emergency fund. The limitation is the amount of money that Congress appropriates to establish this fund. That is the only limitation in this bill.

I presume that the curb would be in the appropriations process to what you put into the fund. Is that about right?

Mr. ROESLER. That is right.

Senator BURDICK. In other words, this fund may be used 1 year to a larger extent than some other years?

Mr. ROESLER. That is true.

Senator BURDICK. The congressional limitation would be exercised each year. That is the way I read the bill.

Senator DOMENICI. Mr. Chairman, I might just comment, and I think you are absolutely right, the proposed bill sets up a revolving fund with the Congress putting a dollar figure in it.

I think the question that still remains is the extent of discretion that should be vested in the Secretary of Agriculture as to how much should be spent on any one project without any congressional approval.

Since it is emergency in nature, it originally was not intended for huge projects. If we put \$50 million in the revolving fund, the only check Congress has is at the end of the year to see whether it is 50 projects or whether it is 4.

I think I was asking whether it is the \$300,000 that bothers you or the fact that we haven't appropriated enough money. I think I understand what you are saying. I understand the position you are taking.

Thank you, Mr. Chairman.

Senator BURDICK. I think we got the thrust of your testimony. I want to thank you for coming all this distance to tell your story.

Thank you, very much.

Mr. ROESLER. Thank you.

Senator BURDICK. The next witness is Joseph W. Haas, Deputy Administrator for Water Resources, Soil Conservation Service, U.S. Department of Agriculture.

**STATEMENT OF JOSEPH W. HAAS, DEPUTY ADMINISTRATOR FOR WATER RESOURCES, SOIL CONSERVATION SERVICE. U.S. DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY JAMES KINCANNON**

Mr. HAAS. Thank you, Mr. Chairman.

I have asked one of my associates, Mr. James Kincannon, to be with me. He is familiar with some of the technical procedures in this program.

I am pleased to have the opportunity to present the views of the Department of Agriculture on S. 1224.

S. 1224 would amend section 216 of the Flood Control Act of 1950 to remove the \$300,000 limit on annual expenditures for emergency treatment of watersheds which are suddenly impaired by natural elements or forces and authorize the establishment and maintenance of a continuing emergency fund in an amount determined by the Congress to be necessary for emergency watershed protection work.

Enactment of this bill would authorize appropriations to establish and maintain the emergency fund in an amount believed to be sufficient to provide the needed emergency watershed work. Funds

would remain available for emergency watershed protection work until expended for that purpose. The year following expenditures for emergency work, a budget request would be made in the amount needed to maintain the fund.

The Department of Agriculture opposes enactment of this bill. We recognize that the \$300,000 limit on annual expenditures for emergency work has not been adequate in many years and that supplemental appropriations have been required.

In fact, \$4 million was appropriated in 1969, \$3.7 million in 1970, \$16.5 million in 1972, \$20 million in 1973, and \$22.5 million in 1974. We also recognize that delays involved in obtaining supplemental appropriations may result in further, otherwise avoidable, damage.

Nevertheless, removal of the \$300,000 limit would put an inordinate strain on the funds appropriated for the more permanent, long-term flood prevention measures. In this era of economic pressures on resources, we do not believe it wise to establish a special fund with additional appropriations for this purpose.

Moreover, we do not believe it appropriate to establish a separate fund to be used for the conduct of any Federal program without the usual appropriation review process. It is for these reasons that this Department does not recommend enactment of this legislation.

I will be glad to respond to any questions you may have.

Thank you.

Senator DOMENICI. Thank you, Mr. Haas.

I do have a few questions. Can this program be used for restoration work or is it just limited to the construction of emergency work for the improvement of runoff retardation?

Mr. HAAS. The intent of this program is to remove hazards to life and property that result from natural disasters. It is not necessarily for permanent work of improvement, unless those happen to be the least costly and most expedient way of removing those hazards.

Senator BURDICK. What emergency works and improvement measures are usually undertaken, small dams, debris basins, or levees?

Mr. HAAS. No, sir. The major portion of this work actually involves the removal of blocks in channels, removal of debris from bridges, stabilization of streambanks, replacement of riprap on streambanks, and the like.

Very rarely is it used for the construction of dams of a permanent nature or levees. It would be used for repair of levees that were broken by any natural disaster that thereby created a hazard.

Senator BURDICK. Are the watersheds in which these activities are carried out limited in size as they are in Public Law 566 programs?

Mr. HAAS. No, sir, they are not. The section 216 authority under which this program is carried out does not limit the size of watersheds. There is really no connection with the Public Law 566.

Senator BURDICK. The board of engineers has a similar authority for flood emergency works. How are duplications avoided?

Mr. HAAS. On major disaster areas that are declared nationally, the Federal Disaster Assistance Administration is the overall coordinating agency. The various agencies with emergency authority get together and discuss the problems and decide which fits within the appropriate authorities. We do likewise within areas that are not nationally declared.

Senator BURDICK. Can this authority be used to undertake emergency measures on private property?

Mr. HAAS. On private property, yes, sir.

Senator BURDICK. To what extent and what is the cost formula applied?

Mr. HAAS. In all cases, the work is carried out—let me correct that. There is some work that is carried out on public lands, forest fires, and things of that nature; but by and large, the money is used upon private property, but is used in such a way that there are benefits to a community or to a group. We do not use these funds for the benefit of individual farm property.

Senator BURDICK. In the bill under consideration you stated that you oppose removal of the money limitation. Let me ask you what is the difference between having a revolving fund, having the existing limit, and making supplemental appropriations for this emergency money? What is the difference?

Mr. HAAS. Obviously, as I said, supplemental appropriation is rather slow. This, of course, has an adverse effect on the program. On the other hand, the dollars that are appropriated in total are in the neighborhood of about \$25 million for flood prevention works of improvement, primarily on the 11 major watersheds that were authorized by the Flood Control Act.

Section 216 of the Flood Control Act of 1950 permits an expenditure of up to \$300,000 of those funds. If this limit were removed, then, in theory, the entire \$25 million might be used for this purpose and we would be in for a great deal of administrative judgment as to whether the \$25 million would be used for long-term works of improvement or whether they would be used to carry out emergency work following a disaster.

We feel that the trade-offs and competition for those funds involved should be at the discretion of Congress, rather than the administration.

Senator BURDICK. We have seen when we had a serious catastrophe that Congress responds quite willingly. Wouldn't it be easier to handle this matter if the funds were available, rather than making more appropriations?

Mr. HAAS. It would certainly be easier. There are time delays.

Senator BURDICK. Mr. Roesler just testified that very little work can be done in the Red River Valley this year because of lack of funds.

Mr. HAAS. This is correct. Money for this work this year is unavailable. Due to the timing of appropriations, emergency funds are included in the Agriculture appropriations bill which is now in Congress. If passed, this money will eventually come to the agency, but it will likely be late in the fall or early winter before the funds are received. Certainly, the North Dakota construction season will be over.

Senator BURDICK. Then North Dakota farmers will lose more years of farm operation?

Mr. HAAS. This is the danger, certainly.

Senator BURDICK. Let's put it this way: Rather than just removing the limitation in favor of a revolving fund, would you prefer a higher limitation?

Mr. HAAS. Sir, if you put it in a revolving fund, the problems associated with that are that the initial establishment of the fund

is really without any justified reason for its need. It is a fund that would be established when and if it should be needed.

Frankly, we do not feel that that is the appropriate way for the program to be administered. Furthermore, after the fund was once established, replenishments again at the end of each year would be, again, an arbitrary amount, not really based on need, but on anticipated need.

Senator BURDICK. Would you be in favor of a higher limit, let's say, \$500,000 instead of \$300,000, as opposed to an open-ended fund?

Mr. HAAS. That certainly is an alternative. Of course, the \$300,000 is an arbitrary figure, as you know, that was apparently placed in the act some 25 years ago. Certainly the costs have increased since then. So there would be some logic to raising that limit, certainly.

Senator BURDICK. Senator Domenici?

Senator DOMENICI. Thank you, Mr. Chairman.

Mr. Haas, I have section 216 in front of me. It is the emergency section. The proviso is that "it not exceed \$300,000 out of any funds heretofore or hereafter appropriated for the prosecution by the Secretary of Agriculture of works of improvement, or measures or runoff of water flow retardation during any fiscal year."

I am confused. If I understand this, you get an appropriation for both long-term and emergency efforts?

Mr. HAAS. Yes, sir.

Senator DOMENICI. This section limits your use in a year for emergency restoration, and so forth, to \$300,000?

Mr. HAAS. That's is correct.

Senator DOMENICI [presiding]. I would assume then that you certainly cannot spend more than \$300,000 on any one project. Is that correct?

Mr. HAAS. Yes.

Senator DOMENICI. Under this section?

Mr. HAAS. Yes.

Senator DOMENICI. As a matter of fact, what is the general size of the kind of project that comes under 216 that you have undertaken in the past years?

Mr. HAAS. It is difficult to categorize them as projects, Senator.

Senator DOMENICI. All right, efforts?

Mr. HAAS. Within a watershed there may be a block in one section of a stream, and another block 3 miles downstream, as opposed to a specific project size area. So the individual work that is carried out is often quite small, perhaps from a few hundred dollars up to several thousand, in total, in a particular storm area.

However, it can reach into the millions if those individual acts were taken accumulatively.

Senator DOMENICI. Are you satisfied that they are truly matters of emergency that you are covering under this section?

Mr. HAAS. In the way we interpret it, emergency is a hazard to life and property. Certainly, our field investigations indicate there are hazards to life and property or we would not undertake the work, resulting from natural disasters, of course.

Senator DOMENICI. Are they any different than what corps does and the Ritz emergency powers as to public roads or public lands and the like?

Mr. HAAS. No. I would say they would be similar. Our work is generally limited to the more upstream areas whereas corps works on major rivers and large cities and things of that nature. Our work is generally on the agricultural areas of the country, agricultural or small municipalities as opposed to major cities.

Senator DOMENICI. In your experience, do we have more than \$300,000 worth of the type of project in calendar years from time to time that are truly emergency that should be taken care of?

Mr. HAAS. Yes, sir. As the appropriation indicates or as my statement indicated, in the past years since 1969, there have been amounts used considerably, or amounts appropriated supplementally considerably in excess of the \$300,000. In 1969, there was \$4 million, in 1974, an additional \$22.5 million was provided.

Senator DOMENICI. That is under this section?

Mr. HAAS. Yes, sir.

Senator DOMENICI. It is not for the overall efforts long term, but merely to take care of emergencies?

Mr. HAAS. This is correct.

Senator DOMENICI. If I understood your testimony correctly, you didn't want the \$300,000 taken out because you were concerned that if that was open-ended, that the money would come out of your long-term program or diminish its effort. Is that correct?

Mr. HAAS. This is true.

Senator DOMENICI. So that from the standpoint of you as an administrator, that is one of your biggest concerns?

Mr. HAAS. Yes, sir.

Senator DOMENICI. So if we could figure out a way to not pit one off against the other, you do acknowledge that \$300,000 is an inadequate amount as evidenced by the fact that you have got to come into Congress for supplementals at regular intervals far in excess of the \$300,000?

Mr. HAAS. It certainly has not been adequate in recent years. Obviously resulting from the recent Hurricane Eloise, I am sure there will be other demand or requests for this kind of work.

Senator DOMENICI. I am a staunch advocate of your long-term efforts, but I truly can't understand why emergency is any less important than the long term. I think as a Nation, we have recognized a natural disaster emergency as being one of the highest priority undertakings as a Nation.

We do that with these supplementals and we do it every time we have a major disaster. I don't understand why you seem to place the long term on a higher priority than the other.

Mr. HAAS. I respect those views, sir. Certainly there are two schools of thought on it. The permanent work of improvement do, hopefully, create or remove the potential hazard to future catastrophes of this nature, whereas the emergency, what I refer to as the emergency or expedient work simply restores conditions to those that existed prior to the storm.

So should the same storm occur, potentially the same damage might occur. In many respects, we feel permanent type of protection in the long run are more desirable.

Senator DOMENICI. Are there any other reasons that concern you about the emergency versus the permanent? Are there any other

potential abuses that we are unaware of here that in your experience might have come about under the emergency activities?

Mr. HAAS. No, sir; I don't believe so. Obviously, funds of this nature are in great demand. It does place a great deal of responsibility on an administrator to see that the funds are used properly for the use for which they were appropriated. Aside from that, no, sir.

Senator DOMENICI. You have given us the supplemental appropriations under this section that have occurred in the past few years. I wonder if you have the projects that have been undertaken with the supplementals with some kind of dollar figure that is attributable to them?

Mr. HAAS. I will have to supply that detail for the record, Senator, if I may. There are a large number of individuals undertakings along streams and in the watersheds.

I could give you this either by individual activities that were undertaken or perhaps within a storm area, whichever you would prefer. There are literally hundreds or thousands, I suppose, of projects or individual measures that are installed, perhaps riprapping along stream banks, debris removal, and so forth.

Senator DOMENICI. Why don't you, if you can, supply them to the committee. It would appear within a watershed and within a particular natural disaster timespan there would be a series of temporary measures that are required.

I think that would give us a better idea of the nature of what you need as a result of a natural disaster in a given watershed or in a given area.

That would be helpful to us if you could do it in that way.

Mr. HAAS. We will make a compilation of that nature and provide it for you in that way.

[The information requested follows:]

Supplemental Appropriations for Section 216 (Flood Control Act of 1950) were for the emergencies indicated and were as shown on the following table:

PL-91-47 - approved July 22, 1969, provided 4 million dollars, to cover work by the Soil Conservation Service and the Forest Service, in California and Idaho.

PL-91-166 - approved December 26, 1969, provided 3.7 million dollars for emergency work resulting from the storm Camille, in Virginia.

Project Code 5001 - PL-92-607, approved October 31, 1972, provided 16.5 million dollars for the installation for emergency measures. Major flood events covered were Hurricane Agnes and the Black Hills of South Dakota. These funds were allocated to the several states, as listed in the attached table. The total includes \$529,583 carry-over emergency funds from prior supplemental appropriations.

Project Code 5002 - PL-93-50, approved July 1, 1973, provided 20 million dollars for installation of emergency measures. Major events are associated with the March 1973 flood in the Mississippi Valley and adjacent areas. The attached table shows the distribution of the funds among the several states.

Project Code 5003 - PL-93-305, approved June 8, 1974, provided 22.5 million dollars for flood events in the Northeast, Northwest, Mississippi, Missouri, Arkansas, North Dakota, and adjacent areas. The attached table shows the distribution of this money to the several states.

Attachment

October 10, 1975

Distribution of Emergency Watershed Protection Funds for Work  
Authorized by Section 216 Flood Control Act of May 17, 1950

Allottee Office	Project 5001 PL 92-607 (10/31/72)		Project 5002 PL 93-50 (7/1/73)		Project 5003 PL 93-305 (6/8/74)	
	Obligated Through 6/30/75	Allotted FY 1976 <u>1/</u>	Obligated Through 6/30/75	Allotted FY 1976	Obligated Through 6/30/75	Allotted FY 1976
<u>State:</u>						
Alabama	7,233	2,500	350,998		451,592	26,008
Arkansas		5,000	2,031,672	619,328	155,233	(-23,232)
Georgia			101,200			
Idaho					260,490	210,510
Iowa	17,598					
Kentucky		5,000	407,473	107,527	232,041	82,959
Louisiana			24,381	3,200	13,000	
Maryland	762,259					
Minnesota	41,539	39,381			60,629	1,371
Mississippi		5,000	8,151,308	48,692	2,226,243	4,573,757
Missouri	40,000	5,000	6,866,949	28,051	2,819,082	155,918
Montana					36,901	
Nevada	10,027					
New Mexico		27,000				
New York	6,618,041	44,201			495,608	12,892
North Dakota		40,000			388,097	406,903
Oregon	101,925				3,244,712	498,288
Pennsylvania	3,618,016				47,007	27,993
South Dakota	829,618					
Tennessee		5,000	550,000		37,752	533,248
Vermont	87,425				573,414	4,086
Virginia	1,102,525					
West Virginia	161,873	45,000				
<u>TSC'S:</u>						
Lincoln, Neb.					1,757	2,744
Portland, Ore.					5,724	4,276
Broomall, Pa						4,907
Ft. Worth, Tex.					5,092	10,000
DC-W	30,956		5,359	641	720	9,280
SCS Total	13,429,035	223,082	18,489,340	807,439	11,055,094	6,541,908
Grand Total	13,652,117		19,296,779		17,597,002	
Unallotted SCS		22		20,221		151,298
Forest Service Total	3,377,444		683,000		4,751,700	
Total Available	\$17,029,583 <u>2/</u>		\$20,000,000		\$22,500,000	

1/ Carryover fund reallocated for current emergencies.

2/ Includes \$529,583 carryover emergency funds used prior to supplemental appropriations.

Senator DOMENICI. You indicated in answering the chairman's question about the difference between the corps work and yours, you distinguished between national disasters declared such by the President and nonnational disasters. You indicated you did your work in the latter?

Mr. HAAS. We do work in both. We are not limited by—let me say it another way. We do not require that a national disaster area be declared before we expend these funds.

Senator DOMENICI. So that I am totally familiar with the national disaster declaration, what findings have to be made? Could you kind of tell us how you determine your scope beyond that?

Mr. HAAS. We have no minimum scope. Many storms, especially in many sections of the country, are sudden and in very relatively small localized areas. There may be emergency conditions in a very small community or relatively small agricultural area that really are not significant enough on the national scene to generate a national declaration of emergency.

We feel it important to give assistance to these kinds of areas also, in addition to the nationally declared area. There are problems, although on a smaller nature or scope perhaps. They are certainly as important to that community as the major disaster areas are.

Senator DOMENICI. If I understand correctly, you use the statutory definition of your authority and then it just comes to your attention that there is that kind of situation existing and you clear with it on an *ad hoc* basis within existing funding constraints?

Mr. HAAS. Yes, sir, we have administrative procedures. We have a State conservationist in each State in the United States. They are the senior line officers in those States responsible for all SCS programs.

When a disaster occurs in a particular State, there is a required report he must make, a required format for him to submit to the national office. Based on his report and his view of the needs and our review of his report, the funds are allocated to those States for those purposes. There is a rather stringent review system that takes place.

Senator DOMENICI. So we will know for the record, are environmental impact statements a part of this process?

Mr. HAAS. Sir, not individually. We have published a draft environmental impact statement on the program itself. Before the end of this month or perhaps by the middle of the month, we will have the final environmental impact statement to describe the kinds of activities that are carried out in connection with this program.

Senator DOMENICI. For my own understanding of the situation, the \$300,000 provision in the existing law, you are not concerned about that on a project-by-project basis, but rather, as a limitation against the drawing down, against your general appropriations for long-term endeavors. Is that correct?

Mr. HAAS. Yes, sir.

Senator DOMENICI. It would become a maximum in any event for a project, I assume, but really it is not terribly relevant because you only have \$300,000 for the whole country. You would have to come in for a supplemental once you have used it up, in any event. Is that right?

Mr. HAAS. That is correct.

Senator DOMENICI. If we figure out a way to come up with some reasonable bounds of annual expenditure, other than the \$300,000 that

was fixed and gave you more latitude to cover more of them, even if you needed a supplemental after it and didn't take it out of your general operational funds, most of your objections would be to limiting it. Is that correct?

Mr. HAAS. Yes, sir.

Senator DOMENICI. Thank you, very much, Mr. Haas.

We would very much appreciate that summary. I think it will be helpful to us in understanding the proposed amounts and what we ultimately do.

Mr. HAAS. We will provide it, sir.

Senator DOMENICI. Did you have any other matters that you wanted inserted in the record?

Mr. HAAS. No, sir; I do not.

Senator DOMENICI. Thank you, very much.

Is Mr. Thomas Barlow here?

Mr. BARLOW. Yes, sir.

Senator DOMENICI. We are going to go out of order and ask you to be our next witness, please.

**STATEMENT OF THOMAS J. BARLOW, NATURAL RESOURCES DEFENSE COUNCIL, ACCOMPANIED BY FRED W. JOHNSON, WATER RESOURCES COORDINATOR, PENNSYLVANIA FISH COMMISSION, HARRISBURG, PA.; KENNETH R. HAMPTON, ASSISTANT CONSERVATION DIRECTOR, NATIONAL WILDLIFE FEDERATION; AND RAYMOND CORNING, VIRGINIA COMMISSION OF INLAND GAME FISHERIES**

Mr. BARLOW. If I may, Senator, I would like to ask if Mr. Ken Hampton of the National Wildlife Federation and Mr. Fred Johnson, and Mr. Ray Corning to join me at the table.

Senator DOMENICI. Indeed.

Mr. BARLOW. Thank you.

Senator DOMENICI. Would each of you identify yourself, please?

Mr. HAMPTON. I am Kenneth Hampton. I am the assistant conservation director for the National Wildlife Federation.

Mr. CORNING. I am Raymond Corning with the Virginia Commission of Inland Game Fisheries.

Mr. JOHNSON. I am Fred Johnson, Mr. Chairman, water resources coordinator for the Pennsylvania Fish Commission.

Mr. BARLOW. Senator, in the interest of time, I will submit my statement for the record. I do want to read portions of it and make certain comments.

Senator DOMENICI. The entire statement will be made part of the record. (See p. 92.)

Mr. BARLOW. Thank you.

My name is Thomas Barlow. I represent the Natural Resources Defense Council (NRDC). We come before this committee with testimony in opposition to S. 1224 as presently drafted. Senator, the expenditure of section 216 funds in recent years by the Soil Conservation Service in disaster areas has created tremendous controversy.

Hundreds of miles of streams in Virginia and Pennsylvania, and other States were channelized after the disasters of Hurricanes Camille and Agnes in the last few years. Much of this work was done very

quickly without proper consultation, indeed often without any consultation at all with State natural resource agencies, particularly fish and wildlife agencies.

Many of these State agencies did not find out where the work sites were until construction was underway or the work was completed. At that point there wasn't anything that they could do about it, the work was done. In situations where work was planned and they found out about it ahead of time, their considerations were ignored or overruled in a very heavy-handed fashion by SCS personnel.

There is tremendous resentment among fish and game people throughout these States with this SCS program. We are concerned that these ugly situations not recur in the future. We don't believe that regulations of the SCS to remedy these past abuses are sufficient to prevent their recurrence in the future. We believe that if changes are made in section 216 of the Flood Control Act, that legislative remedies have to be involved to prevent future abuses.

Senator DOMENICI. Could you elaborate on that statement for me?

Mr. BARLOW. You mean on the changes that would be needed in law?

Senator DOMENICI. You said if changes have to be made, they have to be made in law. What were you referring to, changes in the way they are doing their things now?

Mr. BARLOW. Yes.

Senator DOMENICI. You are not satisfied with their regulative adjustment to the complaints; is that what you are saying?

Mr. BARLOW. Yes. They are not sufficient to prevent continuing abuses in the 216 program. And such refinements in law will benefit the agency, too, because there are responsible people within the SCS who want to do a good job with this money. But the law as it is on the books now and as it is drafted for amendment here, creates too much latitude. With this proposed legislative breadth wise decisions at the top in the SCS can be biased or ignored further down the line at the local level.

For instance, S. 1224 would remove the present \$300,000 annual limit on funds to be expended by the authority of section 216. The effect of this removal and the failure to insert any alternative ceiling creates a permanent, revolving fund for SCS work on streams and rivers anytime, anywhere and in any dollar amount. All SCS work—Small Watershed—Public Law 566—R.C. & D. projects, and so forth—is, in a sense, designed to repair disaster damage or prevent emergencies.

Therefore, it is entirely conceivable that over the course of time a great portion of SCS stream channelization currently funded through other SCS authorities, could be funded out of section 216 funds and thereby escape the constraints on unwise construction work that have been laboriously incorporated in these other programs.

At a minimum, work that runs into roadblocks in programs in these other authorities—roadblocks as a result of negative findings in environmental reviews, for instance—this destructive work could be financed under the section 216 authority and be accomplished without meaningful review. The simplest method of preventing such massive transfers is to place a dollar ceiling on this section 216 authority. We would suggest a \$5 million ceiling. We feel that this would be sufficient to service emergency watershed repair work.

Since this funding is intended for repair of disaster areas, we feel that language should be included, directing the SCS to spend this money only in counties that the President has declared to be national

disaster areas. This modification would assure that your 216 money gets spent where it is really needed and not an ordinary works of modification in nondisaster areas.

So that the SCS does not fall prey to political pressures and concentrate funding in any particular county, we suggest that there be a spending limit of \$50,000 per county to be expended only during the term that the county has a national disaster area classification. We feel that this sum will get the emergency repair work done quickly and adequately.

We also feel that language has to be inserted in this amendment to require the SCS to coordinate prior to construction with State natural resource agencies, especially State fish and game agencies to be sure that the work planned is limited to true, emergency repair work. We agree with the need for disaster cleanup. There are blockages in streams; banks are scoured and need shaping. These are problems that need immediate attention.

Someone should get in there and help with this type of assistance. But only when they are working in coordination with State natural resources, State fish and game people. Any more extensive work needs much more careful planning. We feel that language in the law should require these standards.

Senator DOMENICI. Let me stop you for a minute. I assume you have the other witnesses with you so that you can give us some examples of the kind of abuses you have just indicated has taken place; is that correct?

Mr. BARLOW. Yes, sir.

Senator DOMENICI. I assume you are going to do that shortly?

Mr. BARLOW. Yes, sir.

Senator DOMENICI. Let me ask you about the difference between a national disaster and something less. Have you ever been in a disaster situation, itself?

Mr. BARLOW. Yes, sir.

Senator DOMENICI. Did you know whether it was national or non-national?

Mr. BARLOW. We want to be certain that this money was spent on true emergency repair work in disaster areas and not to fund ordinary works of improvement.

Senator DOMENICI. But the U.S. Congress has not limited disaster relief to Presidential-declared disasters. We have a scope of relief for that kind, but we have other kinds of disaster relief that are extremely helpful and recognize the existence of an emergency and a need that covers areas that are far less severe and far different in nature.

SBA provides an awful lot of money to renovate homes and the like for an area that is far less than a national disaster. We are still terribly perplexed over the definition. When 12 houses are totally destroyed and the 3 roads that serve them are, we get a lot of complaints of why there is no relief to them. It is just as much a disaster to them as it is when half of Omaha, Nebr., goes with the big wind.

For the individuals that are suffering, I wonder whether or not you are not groping for something other than being as arbitrary as national versus nonnational.

Mr. BARLOW. Perhaps some of the other gentlemen, here at the table, would like to comment on that. Senator, there has to be some legisla-

tive distinction made to keep this money from being spent in non-disaster work. The situation could easily arise as the language is drafted here, that the SCS could spend this money almost totally for nondisaster work, a disaster might strike toward the end of a year and there wouldn't be any money in the till. They would have to come back for a supplemental appropriation.

Senator DOMENICI. The \$300,000 has been totally ineffective, under your reasoning; because, as a matter of fact, with it in there, you contend there are substantial abuses. Obviously, it is rather irrelevant as to the success or failure of the program.

Mr. BARLOW. That is true. The abuses have come with the supplemental appropriations. There was \$6 million spent in the State of Virginia. Isn't that right, Mr. Corning?

Mr. CORNING. Yes; that occurred for two storm events: Camille and Agnes.

Senator DOMENICI. Would you repeat that?

Mr. CORNING. Yes. These moneys were spent for two storm events: Camille and Agnes.

Senator DOMENICI. We want you to give some examples. But I want to ask you about your \$50,000 limitation, also, in your suggestion. I understand you are just suggesting things here. You are not saying this is foolproof and that there isn't something equally as good. Here, again, I wonder if the people damaged, that have an emergency where the need is more than \$50,000, whether or not, once again, you are drawing an arbitrary distinction that can cause as many problems as it solves. Do you have some reason to pick 50? Is there some historical significance to the \$50,000?

Mr. BARLOW. No, sir, there is no historical significance.

Senator DOMENICI. Is there any project evaluation that indicates it is the right figure, any evaluation of projects that indicates it is right?

Mr. BARLOW. We are putting it out for discussion purposes at this point; simply to restrict the money to emergency work that really needs to get done rather than have the SCS decide to spend \$1 or \$2 million in one county; then have no other funds to fund other needed disaster relief work in other counties.

Senator DOMENICI. Would you bear with me a moment? Senator Bellmon has arrived. Senator, it seems to me, based upon the stage we are at, that we could be as long as 10 or 15 more minutes. I would very much like to accommodate you. I am sure the witnesses would not object.

Senator BELLMON. I would be glad to wait.

Senator DOMENICI. Would you, then, proceed to give us some examples. You are here to tell us that during an emergency, or under the guise of emergency, they are doing some other inappropriate things. We would like to have some examples.

Mr. BARLOW. May Mr. Hampton make a statement?

Senator DOMENICI. Surely.

Mr. HAMPTON. Senator, the National Wildlife Federation supports the thrust of what Mr. Barlow is saying, here, today. We, too, are concerned about abuses in this program. We would very much be opposed to seeing legislation enacted which left this emergency kitty open ended, as it now stands. Admittedly, it appears that it is almost an

academic exercise when you limit it to \$300,000 or \$5 million or leave it open ended because they simply will come in and ask for supplemental appropriations in any event.

Nevertheless, it seems to us that it is reasonable to put some sort of a monetary limit on this. As far as having this money used only in areas declared national emergency, or national disaster areas, and limiting the amount of money to \$50,000 per county, again, it seems to us that perhaps rather than put that sort of limitation on it, there could be some sort of legislative guidelines established which would spell out quite clearly just how these moneys could be spent, to circumvent the money being used for projects which really were more long term and not specifically aimed at cleaning up the aftermath of a disaster.

I will now defer anything further I have to say, Senator, to hear the examples from these two gentlemen from Virginia and the State of Pennsylvania.

MR. BARLOW. Yes, Senator, perhaps Mr. Fred Johnson and Mr. Ray Corning could give you examples at this point.

It is also our contention that once the emergency has passed, there is sufficient time following that for proper planning to be carried out and for coordination to go on as to how much of that damage needs to be repaired immediately. The term "emergency" sounds like you have got to rush fast or terrible things are going to occur; such is not the case with most of this work and that is an issue we are talking about.

SENATOR DOMENICI. Mr. Barlow, did you hear Mr. Hampton's last comment, just before you took the mike back? Would you repeat it so he could hear it; about the dollar figures; limitations aren't, necessarily, the test?

MR. HAMPTON. I was suggesting, Tom, that perhaps, responding to the question that you had been asked earlier about limiting the use of this money to areas that had been declared national disaster areas and limiting the amount to \$50,000 per county, rather than getting hung up on these limitations, it might be conceivable and feasible and practical to write into law guidelines that would clearly delineate where these moneys can be used so that we can avoid the money being used on nonemergency projects of the type that I think we are all concerned about.

SENATOR DOMENICI. I want to ask you, Mr. Barlow, since we have another Senator waiting, we are going to ask if you let two Senators testify, and then return. But first, do you generally agree with that premise?

MR. BARLOW. Senator, I feel that the language in the amendment that is before us is just too broad to assure wise guidelines or to prevent future abuse of wise guidelines. There has to be some way to prevent the problems I have outlined here from recurring and new problems with this 216 program from arising in future years. At least now with the supplemental process you know where the money is to be focused. With this amendment 216 money would eventually be spent across the Nation anytime, anywhere, in any amount by the SCS.

SENATOR DOMENICI. I didn't understand Mr. Hampton's suggestion to be that the amended law is adequate unless you do it through guideline and regulation. I understood him to say that perhaps we could better define in the law what we should do and we can get rid of

the arbitrariness of the \$50,000 or the \$4 million and get rid of national disasters. I just wondered if you thought of that and whether or not you think there is merit to that approach?

Mr. BARLOW. We are ready to explore it.

Senator DOMENICI. Thank you very much.

Would the witnesses let the two Senators testify and then we will get back to you?

Senator THURMOND, since Senator Bellmon arrived first, may he testify?

Senator BELLMON. I would be glad to yield to my senior colleague.

Senator THURMOND. That is all right.

#### STATEMENT OF HON. HENRY BELLMON, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator DOMENICI. Senator Bellmon, we are delighted to have you.

Senator BELLMON. Thank you.

I am here in connection with the proposed McClellan Creek Soil Conservation Project in west Texas.

Mr. Chairman, I ask your indulgence that I introduce a statement by Senator Dewey Bartlett, related to the same project. He is in another meeting and couldn't be here.

Senator DOMENICI. It will be made part of the record. (See p. 30.)

Senator BELLMON. Mr. Chairman, I appreciate the opportunity to appear before the subcommittee this morning. I want to discuss the proposed McClellan Creek Soil Conservation Project in west Texas.

As a farmer, I am well aware of the benefits of upstream flood control projects and have long been in favor of this approach.

As a matter of reference it was successfully built in Sandstone Creek in western Oklahoma. This project has been in place now for many years. It has a remarkable beneficial effect upon the area. I strongly believe that the same approach can help many other parts of the country.

As a member of the Agriculture Committee and Appropriations Committee, I have supported up stream flood control and still do.

I am not too familiar with Carson, Gray and Donley Counties in the Texas panhandle, but can fully understand that this proposed soil conservation project would lessen the damage caused by heavy rains. I am not opposed to this watershed project as long as it is designed, constructed and maintained for soil conservation and flood control purposes.

However, I am strongly opposed to any project that will retain water that flows down the tributaries of the North Fork of the Red River that would otherwise run in to Lake Lugert-Altus. It is my feeling that the same purpose of this project could be met by constructing dry lakes that would provide the same soil conservation and same flood control benefits, but would not hold water back, that we presently can fill up Lake Lugert-Altus and to supply the irrigation in the area.

The Lugert-Altus Reservoir was constructed by the Bureau of Reclamation in the early forties to utilize and place to beneficial use all of the unappropriated waters of the North Fork of the Red River above the present site of Lake Altus. This lake serves as a water supply for

the 23,000 residents of Altus, with the remainder being used by the Lugert-Altus Irrigation District to irrigate some 55,000 acres of fine, fertile land in Greer and Jackson Counties. This is land that before the coming of irrigation was not dependable for cropping purposes because of the erratic rainfall of the area.

The Lugert-Altus Lake is full this year for the first time since 1969. It has not been full during any of the past 5 years due to lack of adequate runoff from its watershed which includes McClellan Creek.

During this period, irrigation has been curtailed seriously leaving cotton and grain producers with high cost land and irrigation equipment and inadequate water.

Mr. Chairman, I am not an attorney, but from every basic understanding of water law, the McClellan Creek Soil Conservation Project, if it impounds water, infringes upon the right of Lake Lugert-Altus to the runoff water above it on the tributaries of the North Fork of the Red River.

Mr. Robert B. Harbison of Altus, Okla. will be testifying later during this hearing regarding the legal aspects of this proposed project.

I would like to say Mr. Harbison is well regarded. You will find him to be a very able and well-informed individual and totally competent to represent the Lugert-Altus Irrigation District.

Again, as I stated earlier, I am not opposed to the construction of a soil conservation project on the McClellan Creek if the structures are designed, built and maintained as dry lakes.

An uncontrolled drain must be placed at the valley floor level of each flood control structure designed to allow drainage of all water within a few days. This type of structure would protect the affected areas and not deny irrigation to those who depend for their livelihood upon the Lugert-Altus Reservoir.

Mr. Chairman, I thank you very much.

Senator DOMENICI. Thank you, Senator Bellmon. So you will know the procedure, this particular project will be taken up separately by the committee later on. The concerns that you have certainly will be expressed and inquired of from the experts who will be here.

I think the record will clearly indicate that what you are talking about is an alternate way to do the same thing without denying certain water availability that goes down stream in your State from the proposed project. We will see that is thoroughly inquired of as the proceedings continue during the day.

Senator BELLMON. Thank you, Mr. Chairman. It will be a great tragedy if this government ever allowed this precedent, even though the runoff may arise in another State, to allow another project that would cut that water off and leave the former project high and dry.

I believe the committee should be careful.

Senator DOMENICI. Senator Stafford, do you have any questions?

Senator STAFFORD. No questions.

Senator DOMENICI. Thank you, Senator Bellmon.

Senator BELLMON. Thank you.

[Senator Bartlett's statement follows:]

STATEMENT OF HON. DEWEY BARTLETT, U.S. SENATOR FROM THE STATE OF  
OKLAHOMA

Mr. Chairman, I appreciate this opportunity to present testimony to the Public Works Committee concerning the proposed McClellan Creek watershed project. I can fully understand the desire of the McClellan District for adequate flood

control. As you know, Oklahoma pioneered the concept of upstream flood control, and it has been eminently successful.

However, in the case of the McClellan Project, the impact will not only be flood control but, unfortunately, as presently proposed, will deleteriously affect the available water supply to the Lugert Altus Irrigation District.

In 1942 the Lugert Altus Reservoir was completed using the unappropriated water of the North Fork of the Red River. The water from the lake has annually been delivered to the city of Altus for municipal purposes and the remainder has been utilized to irrigate some 55,000 acres of farmland in Greer and Jackson Counties, Okla.

The proposed McClellan Creek soil conservation project calls for the permanent impoundment of some 29,000 acre feet of water upstream from Lake Altus. This will result in the permanent loss of this amount of water to Lake Altus and thus to the farms of the surrounding area.

There is a solution to the dilemma of solving both the flood problem of the McClellan District as well as maintaining the integrity of Lake Altus' water supply. There is no reason to permanently impound water in a pure flood control project. To the contrary, the most effective flood control reservoir is an empty one when a flood occurs.

I would urge the Committee to approve only such a project which will provide for upstream flood control but not for permanent impoundment. This can be accomplished by placing the water escape valve on the floor of the reservoir where the water will escape downstream after the danger of flooding has subsided.

I hope the Committee will consider these alternatives which can solve both the problems of the Texas and Oklahoma interests.

Senator DOMENICI. Senator Thurmond?

#### STATEMENT OF HON. STROM THURMOND, U.S. SENATOR FROM THE STATE OF SOUTH CAROLINA

Senator THURMOND. Thank you, Mr. Chairman, and members of the committee.

I am pleased to have the opportunity to testify before this Water Resources Subcommittee in support of the Rabon Creek Watershed Work Plan, a Soil Conservation Service proposal to improve the Rabon Creek Watershed in Greenville and Laurens Counties of South Carolina.

Section 5 of Public Law 83-566, the Watershed Protection and Flood Prevention Act under which this project is authorized, provides that both the House and Senate Public Works Committees must approve such watershed work plans in order for the projects to receive Federal funding.

My purpose in appearing before you today is to further acquaint you with this project proposal and urge you to recommend approval by the Senate Public Works Committee.

The Rabon Creek Watershed project is overwhelmingly supported by a wide variety of local organizations and citizens in the Piedmont region of South Carolina. Their support is predicated upon the numerous benefits which would result from this project, such as: reduced erosion, flood protection, decreased sedimentation in existing lakes, improved water supply, and enhanced recreational opportunities.

The total cost of this project is estimated to be \$3,481,000. When completed, it is estimated to yield—and this is important—annual benefits in the amount of \$316,800. Hence, this watershed project has a very favorable, estimated benefit-cost ratio of 1.9 to 1. Quite clearly, this is a justifiable and very worthwhile public works project.

For the benefit of the subcommittee, I would like to briefly elaborate on its numerous advantages.

Construction of the Rabon Creen Watershed project would significantly improve the land and water resources, and the standard of living, in this watershed area of 85,500 acres in Greenville and Laurens Counties, S.C.

The Environmental Impact Statement for this project is very favorable. Among other things, it points out that floodwater damages on 3,020 acres of surrounding cropland, pasture and woodland would be reduced by 76 percent, an annual benefit of \$98,200. Soil erosion on agricultural and forestry lands would be cut by 20 to 50 percent, thus enhancing the physical appearance and productivity of 215 farms in the watershed area.

Among the major benefits of the Rabon Creek project would be reduced sedimentation in nearby Lake Greenwood, a hydroelectric impoundment in the Saluda River. The city of Greenwood, a municipality of nearly 25,000 persons, draws its water supply from this lake, and heavy sedimentation has been a major problem and expense in water purifications for the city. By reducing heavy runoff and stream turbidity upstream from Lake Greenwood, the water quality in this existing lake will be greatly enhanced.

Of course, this project will not only improve the quality of existing water resources, it will also create additional water supplies for municipal, industrial, and recreational uses. The work plan envisions the construction of three relatively small lakes, with 639 surface acres of water and 40 miles of shoreline. These new water resources would provide \$60,500 worth of water for municipal and industrial uses each year. Also, the estimated recreational benefits of fishing, boating, and waterfowl protection would be worth an additional \$85,800 annually.

During this time of economic recovery, it is also important to realize that the Rabon Creek project would help reduce unemployment and underemployment in the surrounding area, where 13 percent of the families have incomes below the poverty level. It is projected that this project would create a permanent increase in employment of some 110 semi-skilled jobs. An additional 50 temporary jobs would be created through the actual project construction.

Quite significantly, it is estimated that only 2 man-years of employment would be lost through this project—due to inundation of some forest and agricultural lands.

Clearly, the impact on the economy and employment in the area would be highly positive.

Mr. Chairman, the Rabon Creek Watershed work plan represents the combined efforts of many people and agencies over a period of more than 7 years. During the course of planning for the project, many potential problems have been overcome and potential adverse effects minimized. The U.S. Fish and Wildlife Service once opposed this project, but withdrew its objections when the project plans were altered to minimize losses of bottomland hardwood wildlife habitat and to maintain a minimum stream flow throughout the project life.

The U.S. Forest Service has concluded that the project will allow improved timber management on privately owned lands by reducing the intensity and number of floods. Thus, the project should result in an even greater return from forest and agricultural land in the watershed area.

I personally think the Rabon Creek Watershed project is one of the most soundly conceived and best planned water resource projects of its kind ever proposed. It is a project that enjoys virtually unanimous support, and, accordingly, I urge the subcommittee to give its approval to the project work plan.

Mr. Chairman, I wish to thank you and the members of the Subcommittee on Water Resources for the opportunity to appear before you in support of this most worthwhile project. I also would like to express my appreciation to your subcommittee staff for the background work they have done on this matter of great importance to South Carolina. In behalf of the many citizens in my State who would benefit from the Rabon Creek Watershed project, I hope it will be promptly approved by both the Senate and House Public Works Committees, and I solicit your support in this effort.

Thank you very much.

Senator DOMENICI. Thank you very much, Senator.

Senator THURMOND. If there are any questions, I will try to answer them.

Senator DOMENICI. There are a few technical questions. We will ask them of the experts later on in the hearing. We greatly appreciate your effort and your very excellent statement with reference to the project.

I can assure you that the subcommittee will be moving rapidly in this area. You should have the committee's final determination in very short order. We thank you very much.

Senator THURMOND. That is very kind. Again, I want to say this project is one that has been worked on for 7 years. There were some objections about wildlife, but they have been withdrawn. The people of both counties have come in; the officials are working together. It has the entire support of everybody now.

It can do so much good in an area that has considerable unemployment.

Senator DOMENICI. Thank you very much.

Senator STAFFORD. I will say, as usual, I find the distinguished Senator from South Carolina to be very persuasive.

Senator THURMOND. Thank you so much.

Senator DOMENICI. Thank you, Senator.

Mr. Barlow, would you, Mr. Hampton, Mr. Corning, and Mr. Johnson return? We won't take much longer. Then we will get to Mr. Robbins and Mr. Vaccaro very shortly.

**STATEMENT OF THOMAS BARLOW, NATURAL RESOURCES DEFENSE COUNCIL, ACCOMPANIED BY FRED W. JOHNSON, KENNETH R. HAMPTON, AND RAYMOND CORNING—Resumed**

Mr. BARLOW. Thank you, Senator.

I would like to read excerpts from four letters which I will submit for the record. The first one is a May 1973 letter from the U.S. Environmental Protection Agency, Region III office in Philadelphia, Pa., to Mr. Francis X. Carney, regional director, Office of Emergency Preparedness, Philadelphia.

You must understand when I am reading the quote from this letter that following their disasters, there was considerable confusion even

among the agencies as to exactly where the money was coming from that was going into disaster areas, what authorities were involved and so forth.

The quote is:

We must understand that some of the OEP (Office of Emergency Preparedness) grants to the States for the purpose of providing stream clearance as a part of the Hurricane Agnes clean-up program were employed to channelize the affected streams. For example, a project now nearing completion in the vicinity of Bergton, Virginia on the North Fork of the Shenandoah River has apparently eliminated an extensive, high quality trout fishery. Other examples of OEP-funded channelization projects in Virginia are German River, Little Dry River, Sirks Run, Crab Run, Bennett Run and Naked Creek. This, we believe, goes far beyond reconstruction efforts and is an action which can have serious adverse environmental effects.

Senator DOMENICI. That letter in its entirety will be made a part of the record.

[The letter follows:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
REGION III,  
Philadelphia, Pa., May 8, 1973.

Mr. FRANCIS X. CARNEY,  
Regional Director, Office of Emergency Preparedness, 2 Penn Center Plaza,  
Philadelphia, Pa.

DEAR MR. CARNEY: We have recently learned of the existence of a situation which we feel should be urgently called to your attention.

We understand that some of the OEP grants to the States for the purpose of providing stream clearance as a part of the Hurricane Agnes clean-up program were employed to channelize the affected streams. For example, a project now nearing completion in the vicinity of Bergton, Virginia on the North Fork of the Shenandoah River has apparently eliminated an extensive, high quality trout fishery. Other examples of OEP-funded channelization projects in Virginia are German River, Little Dry River, Sirks Run, Crab Run, Bennett Run and Naked Creek. This, we believe, goes far beyond reconstruction efforts and is an action which can have serious adverse environmental effects.

Federally funded actions of this nature and scope ordinarily receive environmental impact statements (EIS). It is our understanding that the requirements of NEPA apply to reconstruction activities funded by CEP when no present emergency is involved.

The Hurricane Agnes Debris Removal projects evidently have similar environmental effects to comparable projects carried out by the U.S. Soil Conservation Service and the Corps of Engineers. These projects are quite frequently held to require environmental impact statements. Therefore, it may be advisable to eliminate channelization from the proposed projects otherwise, an EIS would probably be required.

We also understand that many of the reconstruction projects necessitated by Hurricane Agnes are already completed. It is suggested that some environmental review mechanism be established in the future to screen projects necessitated by future emergencies in order to identify those which may have significant adverse environmental effects.

It is recommended that OEP manual "Federal Disaster Assistance Manual for Applicants (4000.5C) be issued to every future applicant who wishes to perform debris removal. Our office was informed that many Pennsylvania applicants did not receive 4000.5C and were totally unaware as to what types of debris removal practices are prohibited.

I hope these comments will be helpful to you in implementing NEPA into your program activities.

Thank you for your continued cooperation.

Sincerely yours,

STEPHEN R. WASSERSUG,  
Director, Air and Water Programs Division.

Mr. BARLOW. The second letter is from Congressman Henry S. Reuss, Chairman of the Conservation and National Resources Sub-

committee of the House, dated September 28, 1972, to Mr. Russell E. Train, Chairman, Council on Environmental Quality. The quote from this is:

It is interesting that in connection with the SCS program, the Virginia Commission wrote on August 5, 1970 to the Bureau of Sport Fisheries and Wildlife that the "emergency measures" being carried out in portions of the Buffalo River watershed due to damage from Hurricane Camille "were in excess of those that could be considered necessary on an emergency basis."

On August 17, 1970, the BSF&W, in a letter to the State Conservationist of the SCS, Mr. Tom F. McGourin, stated that "the Buffalo River and the tributaries were being channelized far in excess of the work listed in the project plans sent to us (by SCS) for evaluation." The Bureau went on to say that it is "rather academic to evaluate the impact of the proposed project in view of the gross damages already incurred by the 'emergency dredging work.'" Finally, the Bureau noted that the proposed "emergency channel excavation on the Buffalo River and other storm-damaged streams has not been coordinated" with the Bureau or the State fish and game agency.

This third letter is from Mr. Ronald W. Hasselman of the Department of Fish and Wildlife in the State of Oregon. This quote is:

By their nature, section 216 projects usually move ahead rapidly and therefore the individual project assessment procedure becomes almost impossible in advance of work to be done in streams. Great haste, ill-conceived project design, and inadequate coordination and supervision have caused problems with some section 216 projects in Oregon \* \* \*

Senator DOMENICI. What disaster was that letter referring to?

Mr. BARLOW. This is a general letter that was received in response to our letter to them, asking for a general evaluation of SCS programs in the State. It is dated September 24, 1975.

Senator DOMENICI. The previous ones were national disasters?

Mr. BARLOW. The previous ones were national disasters. This particular one doesn't refer to any specific projects. He is discussing in general the management of the 216 program by the SCS in Oregon.

Senator DOMENICI. We have some very serious time constraints. If you have other letters that are germane, we will make them part of the record.

[The letters follow:]

CONGRESS OF THE UNITED STATES,  
HOUSE OF REPRESENTATIVES,  
Washington, D.C., September 28, 1972.

MR. RUSSELL E. TRAIN,  
Chairman, Council on Environmental Quality, Washington, D.C.

DEAR MR. TRAIN: In connection with the Council's current study on channelization, we call to your attention correspondence we have received from an official of the Virginia Commission of Game and Inland Fisheries concerning channelization activities "currently being sponsored in Virginia through the Agricultural Stabilization and Conservation Service" as a result of the flooding that took place due to tropical storm Agnes. As noted below, this channelization has been undertaken by the Agriculture Department as an emergency matter without the issuance of any environmental impact statement and without any coordination with the Interior Department or the Virginia agency. We wonder how widespread this is.

The Virginia Commission of Game and Inland Fisheries advises us that part of the work carried out by the ASCS includes the channelization of a number of streams that were channelized previously by the Soil Conservation Service following flooding that occurred as a result of hurricane Camille in 1969. At that time, about \$3 million was approved for use by the SCS in restoring flood damaged areas, according to the Virginia Commission.

Enclosed is a list of the counties in Virginia approved for "Emergency Conservation Measures to help restore damage to farmland caused by tropical storm Agnes". The total amount approved is \$2.5 million.

The Commission states:

"Wide scale stream channelization of 1969 and 1970 changed streams of Amherst and Nelson counties from normally winding streams having abundant vegetation along both banks to uniform stream or channels having a minimum of curves and bends, and with stream banks devoid of trees, shrubbery, or other vegetation. \* \* \* in 1972 shrubbery and tree cover along the banks had still not returned, leaving streams extremely vulnerable to excessive erosion by major floods.

\* \* \* \* \*

"Stream channelization did not accomplish its proposed purpose during flooding from hurricane Agnes. Straightening of stream channels produced marked increases in stream velocities during flooding, and 'piling' of water at channel bends caused new channels to be formed. In many instances the new channels led out into former fields. Silt, sediment, and rubble scoured from a stream bed and stream bank, were deposited on fields wherever 'jumping' of the stream occurred."

The Virginia Commission also advises us that an ASCS official in Washington, Mr. Ray Hunter, "verified the fact that no environmental impact statements had been prepared or considered for any of the so-called emergency conservation measures" now being undertaken in regard to tropical storm Agnes. The Virginia Commission also states that it is "apparent that allocation of the funding, approval for work done, and general supervision, was carried out by groups from the affected counties (which were undoubtedly composed only of agricultural representatives and local officials). Liaison, even on a state level, appears to be almost nonexistent in the program."

It is interesting to note that in connection with the SCS program, the Virginia Commission wrote on August 5, 1970 to the Bureau of Sport Fisheries and Wildlife that the "emergency measures" being carried out in portions of the Buffalo River watershed due to damage from hurricane Camille "were in excess of those that could be considered necessary on an emergency basis".

On August 17, 1970, the BSF&W, in a letter to the State Conservationist of the SCS, Mr. Tom F. McGourin, stated that "the Buffalo River and the tributaries were being channelized far in excess of the work listed in the project plans sent to us (by SCS) for evaluations. The Bureau went on to say that it is "rather academic to evaluate the impact of the proposed project in view of the gross damages already incurred by the 'emergency dredging work'." Finally, the Bureau noted that the proposed "emergency channel excavation on the Buffalo River and other storm-damaged streams has not been coordinated" with the Bureau or the State fish and game agency.

Mr. McGourin, in his letter of August 25, 1970 to the Bureau, called attention to the fact that the planned emergency work on the Buffalo River was not a P.L. 566 project, but rather was being carried out under section 216 of P.L. 534. He stated that the purpose of the work is to prevent "further damages to life and property from floodwater, erosion, and siltation."

We are concerned about the matters raised by the Virginia Commission of Game and Inland Fisheries regarding this additional channelization work in the Virginia area. It is difficult for us to understand how the ASCS is unable and apparently unwilling to coordinate its activities with the State fish and game agency and with the Bureau of Sport Fisheries and Wildlife, in order to prevent unnecessary damages to the streams in question. It would seem that such coordination is even more imperative in view of the fact that the ASCS is, in large respect, repeating an effort undertaken by the Soil Conservation Service only two years ago. If channelization did not work the first time, what assurances do we have that channelization will work the second time?

We fully appreciate the need to undertake emergency repairs as a result of tropical storm Agnes, and it may be that, in such emergency situations, the requirement for an environmental impact statement could be waived. But in such cases, the construction agency, in this case the ASCS, should not proceed without seeking some environmental review by the appropriate State and Federal agencies. We feel certain that under the President's directives that all Federal agencies cooperate fully and expeditiously in carrying out aid to alleviate the problems resulting from tropical storm Agnes, the BSF&W could have responded promptly in providing adequate technical advice as to the best means of providing this aid with the least amount of damage to our environment.

We request that the Council review this matter with the Department of Agriculture, and provide to us a report on your findings by October 10, 1972.

Enclosed are copies of the correspondence referred to above.

Sincerely,

HENRY S. REUSS,  
Chairman, Conservation and Natural Resources Subcommittee.

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DEPARTMENT OF FISH AND WILDLIFE,  
Portland, Oreg., September 24, 1975.

Mr. TOM BARLOW,  
Natural Resources Defense Council,  
Washington, D.C.

DEAR MR. BARLOW: This is in answer to your letter to John McKean, Director, Oregon Department of Fish and Wildlife, concerning stream channelization as part of Soil Conservation Service projects in Oregon. Your particular interest is if the Soil Conservation Service is satisfying the intent and guidelines of the Natural Environmental Policy Act of 1969 in undertaking project activities, especially those involving stream modification.

Our answer begins with the third paragraph on page 2 of your letter which reports there is no backlog of SCS channelization related projects in Oregon.

However, there is at least one authorized project, Rollin Ditch, part of the Little Muddy Creek project, that may proceed in the near future. It involves channel changes included among projects in the six general program areas the SCS is involved with. These programs are provided for by past Congressional Acts that qualify activities for funding.

In answer to paragraph 3, page 2, all channel modifications have potential to cause serious fish and/or wildlife resource losses depending on how they are undertaken. With the advent of NEPA and even before, the SCS staff in Oregon has made serious efforts to provide coordination with various resource interests to design project activities to be environmentally compatible. Also, effort is being employed to design fish and wildlife resource enhancement features into projects where possible.

Considering your comment in paragraph 4, page 2, it is our understanding that nearly all SCS activities related to environmental modification must in some form be subjected to an assessment process from which to determine if the activity has a significant impact on human environment. Input into the development and review of these assessments is generally sought by the SCS staff.

There are two types of activities which could miss the assessment process. Those project activities qualified as "Critical Treatment Area" as defined by SCS under NEPA guidelines are not required to be subject to the assessment process for a determination of negative impact. However, by administrative decision many projects so classed are assessed. For others, coordination is usually made in development of the specific activity to prevent or reduce adverse impact. Many of the projects undertaken under the Flood Control Act of May 17, 1950, PL 534, Section 216, are an example. Although a programmatic EIS approach is applied to this program state-wide, specific projects require considerable on-site coordination for resource protection. Part of this stems from the fact that estimates of work to be accomplished in the program are rather gross until further on-site evaluation is made.

By their nature, Section 216 projects usually move ahead rapidly and therefore the individual project assessment procedure becomes almost impossible in advance of work to be done in streams. Great haste, ill-conceived project design, and inadequate coordination and supervision have caused problems with some Section 216 projects in Oregon, but certainly not all of them.

The other type of projects that could miss the assessment process are those funded and administered through the ASCS. The SCS provides technical assistance on these projects where requested to do so and can suggest that assessments or even an EIS be developed for certain types of projects. The SCS may administratively decide to undertake this process even though they are not the funding agency. However, the final responsibility for project administration and funding is still a function of ASCS. The SCS recommends withholding reimbursable funds on projects that have serious adverse environmental impacts.

Paragraph 5, page 2, concerns the depth and quality of the environmental

review process associated with SCS projects. Much of this was discussed above. Generally speaking, all projects under SCS purview are presently given an assessment to determine impact on human environment. Those which will have impact are pursued through EIS processes with possible exceptions explained above. The depth of assessment appears to be commensurate with the size and character of project. Larger projects require more detailed assessment. For instance, a detailed EIS is required for development of a marina (an RC&D project) at South Beach on Yaquina Bay, Oregon.

In answer to your questions:

1. We do not see a resurgence of destructive channelization. That which does take place is by far much more closely scrutinized by all concerned interests. Oregon has enacted statutes concerning the filing or removal of material from streams. With the possible exception of occasional ASCS funded activities, all SCS related projects involving any work in streams for more than 49 cubic yards of material are coordinated through Oregon's Division of State Lands. Our Department not only has direct field level input to project formulation with the SCS, we also have this state coordination process which provides another channel of input and communication for projects involving stream modification.

2. The NEPA accelerated and improved a trend by the SCS to seek resource coordination on their project related planning and development. All projects associated with the Small Watersheds Act or RC&D receive coordination at several levels. Projects authorized or initiated prior to NEPA are receiving similar review and coordination through completion even though exempt from the NEPA processes. We anticipate development of increasing fish and wildlife enhancement opportunities in planning for new projects.

An occasional Section 216 project under the Flood Control Act of 1950 still develops into a problem as mentioned before. Those which have been recent problems not only had unacceptable impact to aquatic resources but may in part have provided questionable protection of property or structures from flood damage.

Positive SCS administrative direction over Section 216 projects in Oregon is improving even though these are subject to the "Critical Treatment Area" designation, a qualified emergency.

3. As stated before, the type of projects considered under the Small Watersheds Act are being coordinated to a much greater degree than before. Considerably more emphasis is given to mitigating measures for fish and wildlife resources as well as to enhancement opportunities at least to the extent allowed under the Act. Similar projects under other SCS programs are also receiving more attention in this regard.

4. We do not know of any negative Declarations for projects in Oregon other than for those that might be designated as "Critical Treatment Area". Even these are receiving more administrative attention and direction and some may even be taken through the assessment process.

We hope these comments are helpful to you.

Sincerely,

RONALD W. HASSELMAN.

Hon. ROY ASH,  
Office of Management and Budget,  
Washington, D.C.

DEAR MR. ASH: We are deeply concerned that tight control be kept on Soil Conservation Service (SCS) *Emergency Watershed Protection* budget categories and that expenditures for this type of assistance be reduced to minimal levels as soon as possible. Use of the term "emergency" implies that unless the work is quickly completed dire consequences will result. However, once a flood has receded, the "emergency" is over. Storm repair or flood clean-up assistance is a more apt description for such work.

This is not simply an exercise in semantics. The SCS has given its field offices authority to utilize these emergency funds for *permanent* structural work in *any* area. Per the SCS Administrator's Watersheds memorandum—124 (Rev. 1) July 24, 1973, containing the guidelines for this emergency work:

"An emergency exists because a watershed is suddenly impaired by flood, fire, wind, earthquake, or other natural causes. . . . *The area need not be declared a national disaster area to be eligible for emergency watershed protection.*

"Permanent or long-life measures such as floodwater—retarding structures, channel construction, log basins, debris basins, and grade stabilization structures may be installed as emergency measures if they are *the most feasible way to obtain emergency protection.*"

Perhaps use of the term "emergency" encourages liberalized policies with regard to what these funds can be used to finance and where they can be applied. At any rate the flood emergencies of last spring are over. We trust that the SCS is efficient enough to have coped with those damage situations which threatened life or property. We would suspect that if the agency continued to draw funds for "emergency" assistance or continues to submit significant budget requests for such work categories they are either undertaking or contemplating more permanent structural construction.

Since the Agency's PL566 Small Watershed Program is focused on areas where floods are purported to cause regular problems we would suspect that this "emergency" money could be flowing to areas where Watershed Projects are already authorized or being planned.

We hope that you are receiving reports wherever this might be occurring to assure that the dimensions and particulars of such work are not features of a formal Small Watershed Work Plan. If such were the case, we would feel constrained to seek an environmental impact statement on such projects prior to work being begun to assure that the impacts of such work are fully explained within the context of the project.

Again, we request a rapid phase down of expenditures in this program as soon as possible. We ask that OMB request the SCS to delete wording from its Watershed Memorandum 124 which authorizes use of such funds in areas not officially designated by the executive as disaster areas and remove the wording authorizing permanent structural work in these emergency situations. Such changes will help to reduce expenditures by the SCS in future years.

Sincerely,

TOM BARLOW.

Senator DOMENICI. Just briefly, we would like the other witnesses to give us some examples.

Senator Tower, is 5 minutes too much of an imposition of your time? We will be through in 5 minutes. Then Senator Tower will testify.

Tell us about with reference to your position in this matter.

#### STATEMENT OF RAYMOND CORNING, VIRGINIA COMMISSION OF INLAND GAME FISHERIES

Mr. CORNING. Yes. I have several letters. I must say they are not as polished as they should be.

Senator DOMENICI. Do you want them made part of the record whether they are polished or not?

Mr. CORNING. Perhaps it would be best if I read a few sentences.

Senator DOMENICI. You don't have to worry about the other part. We are delighted to get the content.

Mr. CORNING. I should say at the start that I served on a task force of four State agencies. This task force was charged with developing guidelines for carrying out emergency watercourse activities in Virginia. The consensus of this task force after visiting several completed stream construction modification sites, was that had if they had their choice, they probably would not have considered the work done to have been needed for emergency repairs.

One in particular that I will mention is Saw Mill Run in Augusta County. On this particular project it was proposed to increase the channel capacity over that which existed prior to the flood. This proposed work would result in removal of life stable stream side vegetation. We felt that was clearly in violation of the authorities. Stream channel straightening was considered a part of the plan for Back Creek and Ramsey Creek, both in Augusta County, both a point of land on the inside.

The result of the proposed work also removed stable vegetation, again, a violation of both guidelines and what we felt were the intent of the act.

Throughout this review, the Commission of Game and Inland Fisheries acted as the principal field representative for this four-agency task force. After a number of projects had been reviewed, we came up with a percentage estimate of modifications which exceeded stream disaster repair needs.

This report I will submit to the committee. It lists the violations of our guidelines as proposed and section 216 as we interpret it. We prepared guidelines in the hope that future work would involve the restoration rather than massive modification. However, these guidelines are not binding on Federal agencies.

Senator DOMENICI. It will be made part of the record.

Mr. CORNING. Thank you.

[The information follows:]

SUPPLEMENTARY TESTIMONY OF RAYMOND V. CORNING, FISH MANAGEMENT COORDINATOR, VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, BEFORE THE WATER RESOURCES SUBCOMMITTEE OF THE SENATE PUBLIC WORKS COMMITTEE, CONCERNING PENDING SCS WATERSHED PROJECTS, OCTOBER 1975

#### EXHIBIT 1

The following testimony consists essentially of excerpts from the Virginia Commission of Game and Inland Fisheries Staff review of the Draft Environmental Impact Statement—Emergency Watershed Program authorized by Section 216, PL 81-516 USDA, Soil Conservation Service.

It was noted during the environmental review that several major activities carried out under Section 216 were of substantial benefit to the general public. However, two major activities funded under Section 216 were found to be very damaging to stream organisms and riverine animal life of Virginia. The two activities were listed in the draft environmental impact statement as: section 1c., *Unstable streambanks caused by floods and erosion sources*; and section 1d., *Stream Channels clogged with debris and sediment* (Original review attached).

"Because a substantial portion of the funds expended under Section 216 have been spent in Virginia between 1969 and 1973 (more than \$6,000,000) we feel our apprehensions concerning sections 1c. and 1d. should be given considerable weight. Probably more activities covered under sections 1c and 1d were carried out in Virginia than in any other State in the nation between 1969 and 1973".

The following paragraph is an extract from a letter addressed to the Virginia State Conservationist, U.S. Soil Conservation Service by Deputy Regional Director Towns, U.S. Fish and Wildlife Service and reviewed and concurred in by the Executive Director of the Virginia Commission of Game and Inland Fisheries. This paragraph applies to detrimental aspects of sections 1c. and 1d: "On May 13 (1970) representatives of the Bureau and Virginia Commission of Game and Inland Fisheries made a reconnaissance of this watershed (Buffalo River). It was found that the Buffalo River and the tributaries were being channelized in excess of the work listed in project plans sent to us for evaluation. The channel excavation, according to your staff members contacted in the field, is emergency work being carried out by the Soil Conservation Service to repair streams damaged by the flood that followed Hurricane Camille in the fall of 1969. Channelization has removed submerged logs, boulders, coarse rubble, and most of the stream bank cover from the project streams . . . Clear streams devoid of instream fish shelter and without bank cover are of little value as game fish habitat."

Additional comments on sections 1c and 1d follow:

"So called 'Streambank shaping' for purportedly stabilizing stream banks is not mentioned in section 1c. yet this was a measure used extensively in Virginia. Was this exclusion intended, since environmentalists consider streambank shaping as one of the most destructive measures used (streambank cover is eliminated, it encourages extensive bulldozer work in streams, both immediate and long termed releases of sediment result, natural stream configuration is lost,

shoreline hiding places are eliminated for fish and other organisms, and until shrubs and trees are replaced streambank cutting and widening is more prevalent and of a greater magnitude than if left alone) or was this due to an oversight?"

1d. *Stream channels clogged with debris and sediment*

"The natural process of sediment and bedload transport by streams is ignored in section 1d. The distinction between temporary conveyance capacity reduction and permanent conveyance capacities of a natural stream channel has not been made. Materials of many sizes are periodically transported and then deposited by streams. What often appears to constitute a conveyance capacity reduction at the end of one flood event is only a temporary phenomena as the materials will be quickly placed in suspension and transported downstream by the next flood event. To spend money removing these materials would be folly, not to speak of the ensuing environmental damages. It is strongly recommended that activities covered under section 1d, along with section 1d itself, be eliminated. The decision as to what does or does not constitute a "clogged" stream is too controversial, while truly threatening reductions in channel capacities would be remedied by other funding sources long before funds could be appropriated and utilized under the guidance of S.C.S. personnel."

Exhibits 2 through 15 document the controversy that arose in Virginia over S.C.S. 216 emergency relief activities while the agency was acting under a \$300,000 per project ceiling. The exhibits also document: (1) creation of a State emergency guidelines task force (which was charged with developing guidelines applicable to already approved emergency work of the S.C.S.) (Exhibit 2), (2) certain guidelines voluntarily adopted by the Virginia S.C.S. after some modification (Exhibit 6), resulting controversies over guidelines (Exhibits 8 through 15), and (3) probable breaches of the law applying to 216 activities (Exhibits 8-15).

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
Richmond, June 13, 1974.

Memorandum to: Mrs. Susan T. Wilburn

From: James F. McInteer, Jr.

Subject: Draft EIS—Emergency Watershed Protection Program Authorized by Section 216, PL 81-516 USDA, Soil Conservation Service.

Comments of the Commission of Game and Inland Fisheries regarding the Draft Environmental Impact Statement, Emergency Watershed Protection Program authorized by Section 216 of the Flood Control Act of 1950, Public Law 81-516, follow. Comments are listed under the headings or sections for which they pertain.

Section 1. Description (p. 1)

Under 1. Description (p. 1), it is noted that the Secretary of Agriculture is hereby authorized *in his discretion* to undertake such *emergency* measures for runoff retardation and soil erosion prevention as may be needed to safeguard lives and property from floods. . . . The concensus of the Task Force Committee on Stream Rehabilitation, a committee appointed by the Virginia Secretary of Commerce and Resources and comprised of members from four State agencies, was that the definition of what constituted an emergency was overly broad as interpreted by the Soil Conservation Service. Although not specifically charged with interpreting what did or did not constitute a flood emergency in Virginia, a majority opinion of the task force after they made field inspections of proposed SCS Emergency 216 emergency repair work was that in nearly all cases no true emergency existed. Therefore, it is recommended that the definition of what is necessary "to safeguard lives and property from floods" be precisely defined in much greater detail by the Secretary of Agriculture.

The statement, "Whenever a fire, flood, wind, earthquake, landslide or other sudden environmental impairment occurs, the natural watershed physical conditions are drastically altered" (p. 1) is incorrect as written. All of the above events are caused by nature and therefore would not constitute alteration of natural watershed physical conditions.

"Section 1 a. *Forest fires, landslides and other natural events that leave an area devoid of vegetation.*" (p. 3).

This section is well stated as regards the beneficial value derived from Section 1a activities.

"Section 1 b. *Severe gully and log road erosion caused by storm water runoff*" (p. 4). This section is also well stated and documented.

'Section 1 c. "*Unstable streambanks caused by floods and erosion forces*" (p. 5-8) are in need of modification. In very few instances do floods strip away stream channel vegetation. "Emergency measures" carried out by the SCS following storms Camille (1970—\$3,700,000 spent in Virginia) and Agnes (1973—in excess of \$2,700,000 spent in Virginia) destroyed more streambank vegetation than was destroyed by flooding. Comments made by the Deputy Regional Director, Federal Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, to the Virginia State Conservationist (see attachment—A.1) following field inspections of post-Camille emergency work carried out in Amherst and Nelson Counties were as follows:

"On May 13 (1970) representatives of the Bureau and Virginia Commission of Game and Inland Fisheries made a reconnaissance of this watershed (Buffalo River). It was found that the Buffalo River and the tributaries were being channelized in excess of the work listed in project plans sent to us for evaluation. The channel excavation, according to your staff members contacted in the field, is emergency work being carried out by the Soil Conservation Service to repair streams damaged by the flood that followed Hurricane Camille in the fall of 1969. Channelization has removed submerged logs, boulders, coarse rubble, and most of the streambank cover from the project streams. . . . Clear streams devoid of instream fish shelter and without bank cover are of little value as game fish habitat."

The Executive Director of the Virginia Commission of Game and Inland Fisheries concurred with the above quoted views expressed by the Bureau of Sport Fisheries and Wildlife.

While the statements extracted from the A.D. Little Report regarding sediments are correct, the overall assemblage overemphasizes the importance of stream bank erosion as a source of sediment. As paragraph 2, page 6, states: "Coarse-grained sediment is produced mainly by channel-type erosion, stream bank and bed erosion." The finer grained sediments more commonly transported to streams through overland wash are more damaging to aquatic life than are coarse grained sediments.

Section 1 c. infers that streambank erosion and slumping is not a natural stream event and is, therefore, bad. It should be pointed out that wandering and meandering of streams via streambank cutting and subsequent sediment deposition are natural events which help create rich bottomlands. It is only when these activities become excessive that severe damage to aquatic life results. In fact, some streambank cutting is desirable from an ecological standpoint.

Undercut banks provide pool areas, hiding places and contribute to the diversity of stream sediments. At least one study (Water Fluctuation, a detrimental influence on trout streams; Corning, R.V. 1969, Proc. S.E. Assn. Game and Fish Comm.) indicated production of benthic fauna (129 to 149 pounds per surface acre) was highest in an eroding stream zone.

On page 8, the following statement is made: "Vegetative plantings along streambanks are the single most important measures to stabilize streambank erosion." We concur with this conclusion, but feel the sentence should be broadened to say, "Vegetative plantings, consisting of shrubs, trees and grasses, are the most important measures for stabilizing streambanks. Shrubs and trees are usually more important bank stabilizers than are grasses."

Greater elaboration on "other structural measures" p 8, is needed. Substrate materials removed from a stream section and used in the same section as rip-rap material hardly fits the definition of rip-rap, yet most rip-rapping carried out in Virginia through emergency S.C.S. funding was of this type. Materials already shown to be transportable by stream forces of the local area are seldom of sufficient size for accomplishing the purpose of rip-rap, i.e., stabilization of streambanks.

So called "streambank shaping" for purportedly stabilizing streambanks is not mentioned in section 1 c, yet this was a measure used extensively in Virginia. Was this exclusion intended, since environmentalists consider streambank shaping as one of the most destructive measures used (streambank cover is eliminated, it encourages extensive bulldozer work in streambeds, both immediate and long termed releases of sediment result, natural stream configuration is lost, shoreline hiding places are eliminated for fish and other organisms, and until shrubs and trees are replace streambank cutting and widening is more prevalent and of a greater magnitude than if left alone) or was this due to an oversight?

#### 1 d. *Stream channels clogged with debris and sediment.*

The natural process of sediment and bedload transport by streams is ignored in section 1 d. The distinction between temporary conveyance capacity reduction

and permanent conveyance capacities of a natural stream channel has not been made. What often appears to constitute a conveyance capacity reduction at the streams. What often appears to constitute a conveyance capacity reduction at the end of one flood event is only a temporary phenomena as the materials will be quickly placed in suspension and transported downstream by the next flood event. To spend money removing these materials would be folly, not to speak of the ensuing environmental damages. It is strongly recommended that activities covered under section 1 d, along with section 1 d itself, be eliminated. The decision as to what does or does not constitute a "clogged" stream is too controversial, while truly threatening reductions in channel capacities would be remedied by other funding sources long before funds could be appropriated and utilized under the guidance of S.C.S. personnel. In any event, the conditions produced by true disasters covered under Section 216 have little to do with residents abandoning their homes and migrating to cities, nor with rural to urban migrations. Therefore, the last two sentences in paragraph one, page 9 should be struck from the report.

When "clogged" streams cause increased flooding of agricultural lands (paragraph 2, page 9) it might be more practical to change farming practices to those considered more compatible with flood-prone lands. It would be "unnatural" if streams did not occasionally jump their banks and overflow floodbottom lands. Proper floodplain zoning would also reduce dangers to lives and property. Should section 1 d. not be eliminated, the recommended emergency measures should be discussed in detail, statements made defining under precisely what conditions the emergency measures would and would not be employed, and the short and long term detrimental aspects of each measure discussed.

Emergency measures carried out under section 1 d. and 1 c., along with similar emergency measures being carried out by other agencies, prompted the Virginia Commission of Game and Inland Fisheries to adopt the following policy:

Whereas stream channelization (whether termed channelization, stream improvement, stream bank shaping or emergency flood control) has been found to alter the physical, chemical and biological regimes of streams in ways highly destructive to stream inhabitants, water way dependent wildlife, stream and stream bottom ecology, sport fishing and related recreational values, as well as natural esthetics; and whereas the adoption of land use regulations can help allocate flood prone lands to their most appropriate uses, thereby preventing private and public landowners from burdening other landowners and the public with losses incurred as a result of unwise developments on these lands at the expense of our natural and economic resources; and Whereas the Virginia Commission of Game and Inland Fisheries is charged with protecting the inland fish and wildlife resources of Virginia from needless waste and destruction; therefore be it *Resolved*, That the policy of the Virginia Commission of Game and Inland Fisheries shall be to vigorously oppose stream channelization and related practices, except under the most exceptional of proven circumstances.

The concern created by the section 1 d. and section 1 c. type of activities is further outlined in a memorandum from Mr. James Moore and Mr. James Ryan, Jr., Assistant Attorneys General, dated December, 1973, and addressed to Dr. Allan Hoffman, Chairman of the Commission of Game and Inland Fisheries and to Dennis Brion, State Water Control Board:

"It is our understanding that locally managed federally funded channelization projects, which are undertaken as emergency flood or disaster cleanup efforts, are resulting in severe damage to the aquatic habitats of many of the streams in the Commonwealth. It is our further understanding that the Commission and the Board are desirous of exerting control over the conduct of such channelization projects to the end that damage to those habitats which resulted from such instream work is minimized."

Because a substantial portion of the funds expended under Section 216 have been spent in Virginia between 1969 and 1973 (more than \$6,000,000) we feel our apprehensions concerning sections 1 c. and 1 d. should be given considerable weight. Probably more activities covered under sections 1 c. and 1 d. were carried out in Virginia than in any other State in the nation between 1969 and 1973.

Section 1 e. *Damage to existing dams or dikes which pose an imminent threat to lives and property.*

This section, like Section 1 c, overemphasizes the amount of vegetation along streambanks that is lost through excessive flood stages. If the proper streambank vegetation is present, i.e., shrubs and trees, large scale losses of bank vegetation would not be expected, except under the most major of catastrophies, i.e., ex-

tremely large dams giving way. Significant long term degradation of downstream fishery habitat would not be expected either, except under the above outlined conditions. Even under the most severe dam breakage conditions, good stream side cover would prevent any but minimal damage.

The last portion of the last sentence on page 9 should have the following reference eliminated, since this section refers to "Damage to existing dams and dikes"; "and realignment of good channels which may be encroaching on developed flood plains." Section 1 c. would be a more appropriate place for this comment. Wherever the comment is stated, it is recommended that the statement be qualified to state that realignment of flood channels would be held to a minimum and efforts made to establish the channel as nearly as possible to previous dimensions.

1 f. *Implementation of the emergency watershed protection program.*

Implementation instructions, as outlined in Watersheds Memorandum—124, are considered inadequate. Many of the comments made in other sections, especially precise definitions of what constitutes an emergency, precise definitions of accepted and non-accepted practices, and detailed guidelines sections should be incorporated into the basic Memorandum—124.

Paragraph two, pertaining to sponsoring organizations, should be broadened to bring in environmental interests as a necessary part of sponsoring organizations, since it is the sponsoring organizations that recommend priorities.

It is true that this environmental statement cannot deal with quantitative assessments of emergency measures to be installed. For this reason, it is imperative that authorities and regulations be written as precisely as possible and in enough depth so that only the absolute minimum of emergency work is carried out. All other activities should appropriately require normal environmental impact procedures before being accomplished.

Further, the Virginia Commission of Game and Inland Fisheries objects to the filing of a single environmental statement to cover all future Section 216 activities. Since this environmental statement cannot deal with quantitative assessments, and because many emergency activities could produce severe environmental damage if carried out improperly or unjustifiably under improperly written guidelines, it is recommended that the Council on Environmental Quality require an annual refiling of an environmental statement for Section 216 activities. Annual filing would assure that field guidelines, etc. were revised as new information, techniques and abuses were discovered. It would also assure that the general public and other agencies had an opportunity to review and influence future field activities. Physical, biological and chemical studies should also be required as an on going Section 216 activity in order to determine and evaluate positive and negative aspects of emergency work *prior* to any given emergency.

Paragraphs one and two, page 11, stress vegetative cover as the prime objective of Section 216 activities. However, very little of the more than \$6,000,000 expended in Virginia under this program following hurricanes Camille and Agnes was spent for re-establishing vegetation.

No monies of the \$3,700,000 expended following hurricane Camille were used for re-establishment of shrubs and trees. Only after requests for shrub and tree plantings were made by the State Task Force Committee on Stream Rehabilitation and by the Virginia Commission of Game and Inland Fisheries did the S.C.S. agree to the planting of shrubs and/or trees (willows) using Section 216 funds. Perhaps the intent of the S.C.S. in regard to revegetation following flooding has been changed since early 1973. If not, revegetation statements should be deemphasized as to usage following flooding.

Paragraph three, page 11, beginning "The following construction techniques are used to minimize stream sedimentation . . ." stresses special techniques to be employed. However, two of these recommended procedures were habitually violated in 1973 during work in Virginia; 1) work from one side only, and 2) maintain natural vegetation and streambanks to the fullest extent. A film documentary of emergency activities carried out in Amherst and Nelson counties of Virginia partially substantiate this statement. A letter regarding proposed work on the Rockfish River is also being provided as partial substantiation (see attachment A-2).

The sentence beginning, "The Bureau of Sport Fisheries and Wildlife, the Environmental Protection Agency, state fish and game agencies, and other appropriate environmental interest(s) are invited to participate in the emergency watershed protection program.", is unacceptable. Being invited to participate and having an actual influence on decisions made by the S.C.S. are not neces-

sarily the same. The following letters are submitted in order to shed some light on these difficulties (attachments A-3, A-4, A-5). A controlling influence by environmental groups and agencies at all levels, including command decisions, must be felt as an integral part of Section 216 activities if environmental interests are really to be safeguarded. This statement should be revised to define a more appropriate role for environmental interests as well as procedures for settling differences of opinion. Guidelines should be developed ahead of time with active participation of all groups. Once guidelines are established they should be implemented at the lowest ground level.

Paragraph 2, page 12—Comments regarding Hurricane Camille contracts for removing obstructions and restoring the capacity of impaired streams and the excessive environmental damage that resulted has already been outlined in comments on Section 1 c. However, they are reemphasized by the attached newspaper clipping dated December 3, 1972 (see attachment A-6).

Paragraph 4, page 12—Because of controversial emergency work being carried out in Virginia as a result of Hurricane Agnes, a special Task Force Committee on Stream Rehabilitation was appointed by the State Secretary of Commerce and Resources. Overall conclusions of this committee are outlined in the attached article entitled, "Ecology Unit Asks Power to Enforce" (see attachment A-7).

2 c. *Environmental impacts resulting from installation of streambank stabilization by planting vegetative cover or use of mechanical protection.*

Adverse impacts are not adequately covered in this section, especially in regard to streambank grading and shaping. Some of these impacts are outlined in the comments regarding Section 1 c. This section should state as possible detrimental impacts: excessive use of emergency measures; inappropriate use of measures; improper interpretation of guidelines by heavy equipment operators, other field workers, and supervisory personnel; and inadequate supervision of field personnel.

Temporary and permanent removal of stream cover, loss of stream graded substrates, temporary and/or permanent changes in pool-riffle ratios, and possible temporary and permanent reductions in aquatic life and diversities should also be cited as potential environmental impacts.

2 d. *Environmental impacts resulting from installation of channel debris and sediment removal, floodwater diversions, open channel and debris basins.*

Further additions regarding possible detrimental changes in physical, chemical and biological parameters are needed in this section. A few of the parameters neglected are possible changes in flow rates, stream widths, stream depths, cover, substrate compositions, pool-riffle ratios, species diversities, abundance of organisms, allochthonous inputs and chemical qualities. The probability of increased downstream flooding as a result of overzealous interpretation of emergency repairs should be stressed, along with the fact that removal of "clogged" stream blockages increases the possibility of downstream flooding.

2 h. *Summary of adverse environmental effects which cannot be avoided.*

This section should be expanded to include new additions to other sections.

5 a. *No program.*

It has already been advocated that section 1 d. activities be dropped from the program. However, this request is being restated at this time.

Overall, it is concluded that where flood repair activities are concerned, fish and wildlife of Virginia would have fared better without any section 216 funded activities being carried out in the State. Further, it was a majority opinion of the Task Force Committee on Stream Rehabilitation and of the Commission of Game and Inland Fisheries, that monies would have been better spent for permanent installations, revegetation work and in modifying existing flood plain uses so that emergency flood damage repairs would no longer be necessary.

5 c. *Land use changes and flood plain management measures.*

We take exception to paragraph 3, page 23. Land use changes and flood plain management could lessen environmental impacts on humans rather than create severe impacts. Over an extended period land use changes and well thought out flood plain management plans could greatly lessen losses of human life, costly expenditures for flood damage repairs, and endless forced relocation of people after floods. Good land and flood management practices would also effectively reduce resources of capital, manpower, fuel and equipment needed to produce amounts of food and fiber.

Paragraph 1, page 24—Cost of providing use changes and flood plain management aspects might increase several times the amount used for the existing emergency watershed protection program, but positive aspects would be more

lasting, environmental damages lessened, and long term expenditures probably would be reduced.

5. d. *Increased funding of the existing program.*

Expanding funding for this program would mean increased work carried on outside normal environmental safeguards. Many of the activities carried out under this program are controversial and appropriately should fall under close scrutiny, by Congress and by governmental agencies responsible for protection of the environment.

5 e. *Existing emergency watershed protection without sediment and debris removal, streambank stabilization and open channel measures.*

Positive values of this alternative have not been adequately covered in the statement nor have the stated adverse effects been adequately documented. Types of activities carried out in Virginia, but which would have been excluded under this alternative, may have led to increased future downstream flooding. If so, deletion of these measures would have the opposite effect from those outlined in the statement.

Elimination of the above listed measures, coupled with certain other alternatives such as flood plain zoning and employment of more appropriate land uses is yet another alternative not explored.

6 *Consultation with appropriate federal agencies and review by state and local agencies and public involvement.*

Thoughts on this section have already been expressed. However, in restatement, past consultative and review procedures were deemed inadequate in Virginia, and coordination efforts proved difficult under available guidelines and procedures. Initially, work was carried out without consultation with various state agencies. Precise language outlining the roles various agencies and groups will play in decision making and in settling differences is required. *Someone other* than those who have access to the federal emergency purse should have the power of ultimate veto, otherwise the machine is all throttle and no brake—a situation worthy of grave misgivings by both passengers and pedestrians.

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A-1

U.S. DEPARTMENT OF THE INTERIOR,  
FISH AND WILDLIFE SERVICE,  
BUREAU OF SPORT FISHERIES AND WILDLIFE,  
Atlanta, Ga., August 17, 1970.

Mr. TOM F. MCGOURIN,  
State Conservationist, Soil Conservation Service,  
Richmond, Va.

DEAR MR. MCGOURIN: The Bureau of Sport Fisheries and Wildlife in cooperation with the Virginia Commission of Game and Inland Fisheries, has reviewed your plan for the Buffalo River Watershed project, Amherst County, Virginia, to determine possible effects on fish and wildlife resources. This letter constitutes our report on the project, prepared and submitted in accordance with the provisions of Section 12 of the Watershed Protection and Flood Prevention Act (68 Stat. 666, as amended; 16 U.S.C. 1008).

Project plans call for the construction of two floodwater-retarding structures, two multiple-purpose reservoirs to provide storage for water supply, and approximately 3 miles of stream channelization (plate 1). The impoundments will have a total sediment pool and flood pool area of 387 acres and 679 acres respectively. It is our understanding that all of the proposed reservoirs will be owned by the county and that fishermen access will be provided.

Our 1968 James River survey<sup>1</sup> classified the North and South Forks of the Buffalo River as trout feeder streams. Native trout are also found above the proposed reservoir site on Thrashers Creek, a tributary stream. From the confluence of North and South Forks to where it crosses U.S. Highway 60, the Buffalo River was listed as a trout stream with 75 to 100 percent bank shade, and a stream bottom of boulders, rubble, and gravel. Downstream from the U.S. Highway 60 bridge to U.S. Highway 29, the Buffalo River was listed as a bass feeder stream, with 50 to 75 percent bank shade and a stream bottom of

<sup>1</sup> U.S. Department of the Interior, 1968. Fish and Wildlife Resources as Related to Water Pollution, Chesapeake Bay and Tributaries (Except Susquehanna River Basin). 183 pp.

coarse rubble, gravel, and sand. About 6,000 brook and rainbow trout have been stocked annually in the lower section of the North Fork of the Buffalo and some of these fish commonly drifted into the Buffalo River down to the impoundment site. The stocked area has provided an estimated 2,000 man-days of fishing annually. From the U.S. 60 bridge to U.S. 29, the Buffalo River supported smallmouth bass, other sunfishes, suckers, and chubs. Stonehouse and Mills Creeks, on which dams are also planned, are tributaries of the Buffalo River that probably did not support significant populations of fish.

On May 13, representatives of the Bureau and Virginia Commission of Game and Inland Fisheries made a reconnaissance of this watershed. It was found that the Buffalo River and the tributaries were being channelized far in excess of the work listed and in the project plans sent to us for evaluation. The channel excavation, according to your staff members contacted in the field, is emergency work being carried out by the Soil Conservation Service to repair streams damaged by the flood that followed Hurricane Camille in the fall of 1969. Channelization has removed submerged logs, boulders, coarse rubble, and most of the streambank cover from the project streams. Work had progressed from the forks of the Buffalo to a point downstream from State Highway 156. In this area, Buffalo River and tributaries have been widened and straightened to the extent that they are now one long, shallow, riffle area. It is the opinion of this Bureau that previously described fish habitat in these streams has been destroyed and that these streams should now be reclassified as sucker type habitat. Clear streams devoid of instream fish shelter and without bank cover are of little value as game fish habitat.

Wildlife resources of the watershed include deer, wild turkey, bobwhite, squirrel, rabbit, and fur bearers. A few mallards nest along the project streams and other migrating ducks occasionally use them. There is little bushy cover within the impoundment sites, because the land is cleared for agriculture and wildlife habitat along the streambanks has been destroyed in areas where the emergency dredging work has been completed. In general, the project-affected area is of low value to wildlife.

We find it rather academic to evaluate the impact of the proposed project in view of the gross damages already incurred by the "emergency dredging work." We understand the need for removal of the large piles of rubble and debris that resulted from Hurricane Camille. The need for extensive upstream channelization has not been explained nor was the Bureau consulted before the work was undertaken.

The proposed impoundments will provide temporary reservoir fishing opportunity. It appears that a problem will result from sediment arising in the channelized reaches above these reservoirs. This could very likely shorten the life of these reservoirs. In addition, expected warm-water fish populations in the reservoirs may damage remaining trout habitat on tributaries in the headwaters as a result of centrarchid invasion. Wires should be installed to prevent this occurrence. Inundation of 367 acres of low value wildlife habitat is not expected to have significant detrimental effects on wildlife resources in the watershed. The reservoirs will provide resting habitat for some migratory waterfowl.

We are concerned that the emergency channel excavation on the Buffalo River and other storm-damaged streams has not been coordinated with this Bureau and State fish and game interests. There is a growing interest in our Nation in preventing publicly funded projects from damaging fish and wildlife resources. This is reflected in the recent passage of the National Environmental Policy Act of 1969 which requires all agencies of the Federal Government to include in every recommendation or report on proposals: (1) a detailed statement on the environmental impact of the proposed project, (2) any adverse environmental effects which cannot be avoided should the proposal be implemented, and (3) alternatives to the proposed action.

In view of the impact of the emergency dredging work and the proposed project, the Bureau recommends that:

1. Plans for emergency dredging projects be coordinated with both State and Federal fish and wildlife agencies.
2. Wires be constructed on Buffalo River and Thrashers Creek above the reservoir headwaters to prevent centrarchid invasion of trout habitat.

This report has been reviewed and concurred in by the Virginia Commission of Game and Inland Fisheries and a copy of Executive Director Phelps' letter is attached.

Thank you for the opportunity to comment on the project. It is requested that we be advised of actions taken on your recommendations.

Sincerely yours,

W. L. TOWNS,  
*Deputy Regional Director.*

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A-2

COMMONWEALTH OF VIRGINIA,  
*Charlottesville, Va., August 6, 1973.*

Mr. WARREN FRIEND,  
*Soil Conservation Service,  
Amherst, Va.*

DEAR MR. FRIEND: The proposed plan for the Rockfish River was reviewed as per our project planning responsibilities as outlined in Watersheds Memorandum Va.-19. Channel modification in area 3 around the Route 634 bridge should subscribe to the Va-19 guidelines and not to highway specifications. This adherence to guidelines should minimize stream habitat degradation. We have no further objectives to the plan if our concept of the plan is not widely divergent from S.C.S. intent.

Since reviewing SCS rehabilitation of the Buffalo River we find several points upon which we should comment. The extent to which the channel was realigned above U.S. 60 and through the Sales property was unjustified. We would have strongly opposed such work during Advisory Team meetings had we recognized the true intent of the work plans developed for the areas. In many areas the unconsolidated banks created as a result of the rehabilitation work remain unstable and continue to slide into the stream.

As a result of the Buffalo River review, I must express concern that stream channel excavation in work areas 1, 5, and 7 of the Rockfish could result in a needlessly straightened river channel. We urge that excavation be absolutely minimal so as to return flood flow capacity to pre-flood condition. Also, additional effort should be made to stabilize sloped stream banks with plantings of basket willow or other woody plants, as this is allowed in Kenneth Grant's WM-124 of November 9, 1972. Recent reviews carried out by the State Advisory Committee uphold the Commission viewpoint that channel capacity is defined as the volume of water that can be transported in the channel up to a point where the water level exceeds stream bank (s) and enters the flood plain.

Sincerely,

JOHN KAUFFMAN, *Research Biologist.*

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A-3

COMMONWEALTH OF VIRGINIA,  
*Fredericksburg, Va., May 16, 1973.*

Mr. R. V. CORNING,  
*P.O. Box 519,  
Tappahannock, Va.*

DEAR RAY: I have received Mr. Kidd's response regarding my proposed changes to the "216" work planned for the Rapidan River in Madison and Orange Counties and Swift Run in Greene County (see attached).

This correspondence from Mr. Kidd formalizes the assumption by SCS of the flexibility to make major on-site work decisions "immediately ahead of the equipment". Further, the few changes which we recommended were made to no avail: "We see no reason to change our plans on these." Neither of these positions adhere to the intent or letter of the guidelines which were developed to avert environmental damage during "216" implementation. Thus, our input has been subverted by SCS to the level of an unheeded minority opinion of their work plans; plans which are usually totally embraced by the extremely lopsided make-up of the local advisory committees.

I fully realize the positive effects Memorandum VA-19 has had on SCS operations. Now the document upon which VA-19 was founded, seems in serious jeopardy and we stand to lose these recent and so appropriate gains. This would be so tragic.

Because of their cavalier treatment of our input, I am now wondering if we should continue to expect our field men to submit to the difficult circumstances

presented by meetings of the local advisory committee as they are presently constituted. In the past, attendance was made tolerable only by the sure knowledge that our input was contributing to the protection of our diminishing aquatic resources.

Sincerely,

N. S. PROSSER,  
*Supervising Fish Biologist.*

A-4

COMMONWEALTH OF VIRGINIA,  
*Fredericksburg, Va., June 13, 1973.*

Mr. RAYMOND V. CORNING,  
*Fish Management Field Coordinator,  
Box 519, Tappahannock, Va.*

DEAR RAY: There are two items relative to the "216" guidelines which need to be clarified, refined or altered.

First, the SCS has assumed authority to make work decisions after the local advisory committee has revised the rehabilitation plans. This position is rendered in Mr. Kidd's correspondence relative to work in Madison, Orange and Green Counties. As I stated in earlier correspondence, this assumption of authority by SCS to make unilateral decisions effecting Virginia's aquatic resources violates the intent of the task-force-developed guidelines, and should be clearly, and specifically minimized.

Second, the Game Commission viewpoint has been subjugated by SCS via VA-19 as representing only one opinion among many equal opinions during meetings of the local advisory committees. I quote the guidelines as developed by the task-force membership: "Decisions for work exceeding these limits [guidelines] would require agreement between the designated representative of the Commission of Game and Inland Fisheries and the Soil Conservation Service." Now I quote from Mr. Grimwood's Memorandum VA-19: "Changes suggested and generally concurred in by this [local advisory] team should be made if they are within authority and policy of the Act and in keeping with procedures and guidelines contained below." The wording "generally concurred in" mandates democratic rule. We embrace democratic rule if the advisory committees are democratically constituted.

I have reviewed (subject to errors of memory recall) the local committees as they were formulated for the Orange, Madison, Greene, Nelson and Amherst County meetings. Categorizing the membership by vocational viewpoint, I derive a 3.6:1 positional ratio regarding the SCS rehabilitation plans.

In this tabulation, agency positions were grouped so that the SCS, ASCS, Soil & Water Conservation District, local county political officials, VPI Agriculture Extension Agent, and concerned farmers were in one category while ourselves and the Virginia Division of Forestry representatives were placed into the second category.

Are the SCS people so infallible as to present five perfect rehabilitation programs for the above counties? I ask the question in a rhetorical sense as only one exception (Orange County) was made except by ourselves although a total of twenty-six individuals (excluding Game Commission and SCS representatives) attended these meetings.

There are two additional statements from VA-19 which I should like to quote. Paragraph B. states that: "the 'Advisory Team' [will] participate . . . to help plan the necessary work" (emphasis provided). In fact, in almost every instance, the rehabilitation plans as presented to the local advisory committees by SCS were not changed in response to our representative's suggestions. We were not permitted to help plan the work.

Further into paragraph B. one finds the statement: "The Commission of Game and Inland Fisheries . . . should, however, be invited to review all jobs so that they will have an opportunity to express their opinion and a special effort made to get their concurrence in plans that may deviate from the following guidelines" (emphasis provided). Often very special efforts were made to pressure our representative to concur with the SCS plans. When this failed, SCS began merely to ignore our suggestions. This subversion of our responsibilities to the

rehabilitation work-plans seems to have become increasingly concrete as the weeks passed.

Sincerely,

NORVILLE S. PROSSER,  
*Supervising Fish Biologist.*

A-5

COMMONWEALTH OF VIRGINIA,  
*Fredericksburg, Va., May 2, 1973.*

MR. GARLAND KIDD,  
*District Conservationist,  
Soil Conservation Service, USDA,  
P.O. Box 147, Madison, Va.*

DEAR MR. KIDD: Our appraisal of the "216" rehabilitation work plans for Swift Run in Greene County and the Rapidan River in both Madison and Orange Counties is as follows:

Obvious discrepancies exist between the formal work plans which you filed and your verbal statement of probable compliance with these plans. I would use as an example, item IV-1 of your work description for Swift Run in Greene County and the Rapidan River in Madison County. This statement of work proposed reads: "Removal of vegetative debris and fallen trees that block or divert the stream and unstable trees with undermined root systems. Trees to be marked by SCS and removed to a safe point for disposal by the landowner." Marking of trees selected for removal is recommended in the rehabilitation guidelines which were incorporated into Watersheds Memorandum VA-19.

When asked about the lack of any visible marking on trees to be destroyed, you stated that you did not intend to comply with this stipulation on the basis of: (1) you intended to retain operative flexibility so that during actual on-site work, your staff could select those trees which would be destroyed, and (2) you did not have the time or staff to mark trees which would be cut.

We agree that under certain circumstances, slight modification of individual work plan items may be necessary. We do not agree that the "across-the-board" assumption of the degree of flexibility which you and Mr. McDowell profess, is appropriate. The effect of this position by SCS could effectually emasculate any input by the local advisory committee.

We have encountered no difficulty in having problem trees identified and marked by SCS staff in other disaster counties.

We concur with the vast majority of work as presented to the advisory teams. In fact, of the 50 individual work locations in the 3 counties, we should like to see specific changes in only 3.

More specially, site number 10 of the Swift Run rehabilitation proposal does not, in our opinion, require excavation. Pre-flood capacity has not been reduced by gravel deposits. The better alternative would be to stabilize the flow in its present location. The placement of rip-rap, obtained from an off-site source, may be advisable to protect the left side of the stream bank.

Site 9 and the downstream area of site 24, of the Rapidan River plan in Madison County do not require excavation and would better be served by stabilizing eroding banks as necessary with stone from an off-site source.

The work proposed for the Rapidan River in Orange County should be revised to eliminate the removal of any live, standing trees. These trees were to be cut to facilitate the removal of flood-deposited woody debris. As discussed by the advisory team, this action is probably not warranted.

Sincerely,

NORVILLE S. PROSSER, *Supervising Fish Biologist.*

[From United Feature Syndicate, Dec. 3, 1972]

WASHINGTON MERRY-GO-ROUND

(By Jack Anderson)

WOOL-AND-MUTTON MEN SEEK POISON BAN LIFT

FISHING FOUL-UP

Federal money intended to restore fishing streams damaged by Hurricane Camille in 1969 was actually expended by the Agriculture Department to dig muddy canals that completely ruined the streams.

Not only did the government ruin the streams, but the "flood control" canals made flooding even worse during Hurricane Agnes this year.

This saga of compounded goofs is monumental even in a department noted for its blundering. Small wonder, therefore, that the pertinent documents are hidden in official files. Nevertheless, we have obtained copies which describe the dismaying details.

In the wake of Hurricane Camille, Agriculture began building "flood control" channels in Virginia at a cost of \$3 million in funds that were supposed to be spent to restore fishing streams. When inspectors from the Interior Department's Fish and Wildlife Service and Virginia's Game Inland Fisheries slogged through the mud to see how the project was coming along, they were horrified.

Complained W. L. Towns, deputy regional director of Fish and Wildlife, in an indignant letter to the Agriculture Department: "Wildlife habitat along the streambanks has been destroyed in areas where the emergency dredging work has been completed." This had driven away the "deer, wild turkey, bobwhite, squirrel, rabbit, and furbearers," he lamented, along with the trout that had formerly lived in the unspoiled water course areas.

Now, he said, "we find it rather academic to evaluate the impact of the . . . project in view of the gross damages already incurred by the 'emergency dredging work.'" What was once prime fishing "should now be reclassified as sucker type habitat."

BEFORE THE HURRICANE

In a return letter, Agriculture's Tom McGourin retorted that the channelization "is for the purposes of preventing further damages to life and property from floodwater, erosion and siltation." Undeterred, Agriculture went ahead with its "antiflood" work on more than 10 streams.

Then Hurricane Agnes hit.

Assessing the damage, Virginia's Fish Management Coordinator Raymond Corning reported that the project had left "streams extremely vulnerable to excessive erosion by major floods. . . ."

As Corning detailed it, streams jumped from the channels and "silt, sediment and rubble scoured from a stream bed and stream bank were deposited on fields."

Yet, incredible, Agriculture is going back to its channelization work again. Indeed, some previously untouched streams will be dug up.

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ECOLOGY UNIT ASKS POWER TO ENFORCE

(By David D. Ryan)

A group of state officials told an aide to the governor here yesterday that their efforts to minimize environmental damage during stream channelization are hampered without enforcement powers.

The four officials told Maurice B. Rowe, secretary of commerce and resources, that a permit system is needed to control the stream projects.

"What you are saying basically is that we need some statewide permit system that can be enforced by an agency, regardless of whether the project is an emergency or non-emergency," Rowe said in response to the officials' comments.

Those meeting with Rowe were Joseph B. Wilson Jr., director of the state Soil and Water Conservation Service, Michael A. Bellanca, director of the State Water Control Board's Bureau of Surveillance and Field Studies; Ray Corning, fish management coordinator for the Commission of Game and Inland Fisheries, and Gerald L. Stokes, a planner with the Outdoor Recreation Commission.

They were designated by Rowe last winter to work with the federal Soil Conservation Service to oversee controversial channelization projects that the conservation service was conducting in conjunction with an "emergency" flood cleanup as a result of two floods last year.

After an hour meeting, the task force officials and Rowe decided to:

Wait for a review by the attorney general's office on whether the water control board can require permits for stream channelization projects. If such permit authority exists, the committee insisted that it should give localities help in planning the projects and in following up in the field.

Review all programs that would all allow stream work in order to determine how many projects should be the concern of the committee, and what other state agencies should have representatives on the task force. The Virginia Marine Resources Commission and the Virginia Institute of Marine Sciences were mentioned.

Begin an extensive program on the local level to educate landowners about the potential damage that can occur from channelization, which involves everything from clearing debris from streams to widening and deepening a stream to increase the water capacity it or the drainage area can hold.

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#### EXHIBIT 2—DOCUMENTATION OF THE STREAM MODIFICATION CONTROVERSY IN VIRGINIA, STEMMING IN PART FROM S.C.S. 216 EMERGENCY ACTIVITIES

[From the Richmond Times Dispatch, Sept. 2, 1973]

#### EXTENSIVE STREAM CHANNELIZATION STIRS CONTROVERSY

(By David D. Ryan)

Parts of more than 100 streams in 11 James River Basin counties have been channelized in the past four years under flood control programs conducted by the Army Corps of Engineers and the U.S. Soil Conservation Service, according to reports obtained last week.

The reports indicate the magnitude of stream work that has been and is still being done in the state, work that has recently led to a heated controversy between conservationists on one side and federal and local officials and farmers on the other.

But since the reports only list work conducted under two of a number of federal programs, they apparently only scratch the surface of the total number of streams affected.

Not included in the reports, for example, is the extensive work recently conducted and continuing on the Bullpasture River in Highland County. This work is conducted under an Agricultural Stabilization and Conservation Service (ASCS) Emergency Conservation Measures Program, with each project being certified as needed by a soil conservation service official.

Other stream projects were done under the ASCS's old Rural Environmental Assistance Program and the Office of Emergency Preparedness' flood assistance program, both of which went out of existence this year. In addition, the State Highway Department, county agencies and some planning district commissions have conducted channelization.

Channelization involves removing debris and deepening, widening and straightening streams. Conservationists claim the work frequently destroys bottom life and the habitat that supports fish. Often, for example, bulldozers cause natural fish holes to be covered as the machines move downstream.

Most if not all, of the work requires no environmental impact studies because it is considered emergency flood cleanup. And even when guidelines exist, some soil conservation officials admit that only lip service is given the rules because they are either too broad or subject to too many interpretations.

Programs like the ASCS's emergency conservation measures, under which the Bullpasture work is being done, leave to the individual farmer how the work will be carried out. He hires the contractor, tells the contractor what he wants done and is reimbursed 80 per cent of the cost by the federal government.

Federal and local officials and farmers say the work is necessary to prevent property damage. Farmers say debris in the river causes flooding of pasture and croplands. And there is no doubt that floods like those caused by Hurricane Camille in 1969 and Tropical Storm Agnes last year did extensive damage to farmland and public property.

But stream work has become so widespread that the Virginia Game Commission last year announced it would no longer stock any stream where channelization had occurred. In addition, a state task force was set up to review soil conservation service projects because of complaints from the game commission.

It appears likely that the General Assembly will be asked next spring to expand the scope of this task force to take over review of all channel work projects, because of the way the programs have expanded.

The report on the soil conservation service's programs obtained last week, for example, shows that at least 493 miles of 91 streams were channelized after the Camille and Agnes floods. These projects were done under the service's "216" program of emergency flood cleanup.

The projects were conducted and are still being conducted on streams in the counties of Albemarle, Alleghany, Amherst, Appomattox, Augusta, Buckingham, Campbell, Goochland, Greene, Nelson and Rockbridge.

Some of the most extensive work occurred after the Camille flood, which did extensive damage in Nelson and Amherst counties.

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#### EXHIBIT 3a—DOCUMENTATION OF THE STREAM MODIFICATION CONTROVERSY IN VIRGINIA, STEMMING IN PART FROM SCS 216 EMERGENCY ACTIVITIES

[The following articles are from the News-Virginian, Waynesboro, Va.]

##### A LOOK AT BOTH SIDES

##### CHANNELIZATION: AN OBJECT OF CONTROVERSY

(By Deane Dozier, N-V Staff Writer)

(First of a Series)

High on a mountain, it begins.

A drop of rainwater, clinging briefly to a leaf tip, glistens in sunlight, then falls to the ground.

Others fall, and run together. Rivulets are formed; they slip around rocks, run over leaves, trickle into a gorge, join and become a stream.

The stream gathers in size and strength, surging downhill, slowing and widening on a more level spot, pausing occasionally in little pools, then tumbling again over rocks towards the valley below.

Soon the stream, where it forms in pools, is big enough for waterbugs, turtles, crayfish, minnows and larger fish.

The stream finds another stream, and another. They join, and soon they are big enough to be called a river.

Willows and sycamore trees line the river banks, offering shade for the fish, shade for a boy fishing.

The river turns and twists, lacing itself across the valley floor. Within its loops and curves, man spreads out his farms, erects his cities and towns.

His livestock need water; he fences in pastureland on the river.

The river provides power for his industry and can carry away his industrial wastes; he builds his factories on its banks.

He finds the river beautiful; he builds his homes there.

But the river is not always kind. It is a natural force, and therefore subject to the whims of nature. It goes dry or swells with rain and overflows its banks. It changes its size and changes its course.

Man, who wishes to use the river's benefits, must cope with the river's capriciousness. And there, the water is muddied.

Man builds dams to control the water's flow. He builds dikes along the stream bed to protect himself from floods. He rebuilds the stream to suit himself.

But everything man does to the stream—as is the case in all nature—has consequences not only at the site, but also upstream, or downstream, or both.

Sometimes, in trying to harness the river for one use, man destroys another benefit of the river—his alterations can destroy the natural beauty, kill stream life, turn the river into a stranger he never wanted for a neighbor.

The dams man has built have long been a subject of controversy. Now, more recently, the spotlight is being shared by alteration work man is doing on the stream channel itself, or channelization, the subject of this series.

Here is the picture of the current stream of talk over the channelization issue:

On one side of the stream stand the farmers, the home owners, the industrialists who wish to protect their property from the river's destructive moods.

On the other side stand those who live downstream and do not want the effects of the work done upstream, and fishermen and conservationists who wish to keep the stream in its natural state.

Somewhere in the middle of the stream are government agencies with funds to help with the work, floundering to keep an ear turned toward the voices of those on each side.

Guidelines for channelization have been developed in an attempt to satisfy both sides.

But there are not always funds to put the guidelines into effect. There is misunderstanding about the intent of the guidelines. There is dissatisfaction over work which has been done under the guidelines. And there are programs which bypass the guidelines altogether.

The scene is repeated on riverbanks throughout Virginia and the nation.

Waynesboro and Augusta County are looking for ways to restore flood-damaged streams and protect homes, farms and industry from future floods without ruining other benefits of a valuable natural resource.

Work is now being done on streams in Amherst and Nelson Counties.

What are the problems? What alternatives are there for solving the problems?

This series of articles will explore these questions as they relate to stream work currently underway on the Bullpasture River which flows through Highland County.

The farmers, who own the land which the river flows through, will be heard.

State and local representatives from the U.S. Soil Conservation Service, who gave the "go ahead" for the stream work and who are responsible for being sure the work gets done, will have their say.

The investigations of the Shenandoah Valley Chapter of Trout Unlimited, which opposes the manner in which the work is being done, will be discussed.

A biologist from the state Commission of Game and Inland Fisheries will discuss the effects of stream channelization or restoration and explain why the Commission no longer stocks trout in channelized streams.

Perhaps, by identifying the needs of people on both sides of the issue, by listening to what biologists and other experts have to suggest, and by discussing the practicality of their suggestions with those who actually do the work, the gap of disagreement over the stream will be bridged sooner to the satisfaction of all involved.

## SCS GROUP DEFENDS ITS WORK ALONG THE BULLPASTURE RIVER

(By Deane Dozier, N-V Staff Writer)

(Second of a Series)

MONTEREY.—A gray early-morning chill still clung to the mountains as three soil conservationists drove across the top of Jack Mountain.

Hazy gold sunlight bathed the little valley town of Monterey below where they were headed to join a fourth man, their district technician.

Channelization was the topic of conversation.

The three men, members of the U.S. Soil Conservation Service (SCS), were going to see the channelization work being done on the Bullpasture River where it flows through several farmlands in Highland County.

They were L. S. Button, state conservation engineer, and Clarence J. Treumer, assistant state conservationist for operations, both from the Richmond office, and William L. Blair, area conservationist from the Harrisonburg office.

David Grimwood, state conservationist, had received complaints from the Trout Unlimited organization about "no environmental review for the projects," about "work scheduled where no work is necessary," about "a badly damaged stream ecosystem," and about "a biologically dead stretch of river," where channelization had already taken place.

He was sending his men to Highland County for a firsthand report about the work being done.

Here are The News-Virginian's questions during their trip, with the conservationists' answers:

What is your job in relation to the channelization of the Bullpasture River?

Mr. Treumer: "The work is being done under the Emergency Conservation Measures (ECM) program, funded and directed through the Agricultural Stabilization and Conservation Service (ASCS).

"The landowners themselves decide on the need for the work. We, the SCS, certify that there is a need and check to be sure the work is done. We may give a minimum amount of supervision."

What did you take into consideration when you certified the need for channelization of sections of the Bullpasture River?

Mr. Blair: "Under the Emergency Conservation Measures program, to certify a need for channelization there must be blockage of the stream channel which would create a future flood hazard, or deterioration or erosion of land adjoining the stream.

"On the Bullpasture River, the flooding of last October left a lot of debris in the stream bed, changed the course of the river in some instances, and caused erosion on some of the farmland."

What measures are taken to protect stream life during channelization?

Mr. Treumer: "The Soil Conservation Service has adopted guidelines for environmental protection for stream restoration work under its '216' program. We emphasize these guidelines in ECM work, like the work on the Bullpasture, but we have no assurance they will be followed."

Mr. Blair: "Lip service is about all it amounts to."

Briefly, what are the provisions of your guidelines?

Mr. Blair: "The guidelines allow removal of stream blockage caused by flooding only if the blockage would result in further deterioration of the stream channel or if the blockage significantly reduces the channel size.

"If a new channel is cut by flooding, the stream may be returned to its original channel if the move is considered desirable from environmental and other standpoints.

"The guidelines say the stream channel should be kept the same width and length as before flooding and live, rooted vegetation should be left on the stream bank whenever possible.

"Also, blockage should be removed by operating from the stream bank rather than in the stream bed, whenever possible, and material for building dikes should not be gotten from the stream bed unless the material in the stream bed is in a blockage area.

"As you can see, the guidelines may be interpreted in different ways, and following one rule may mean violating another. For instance, restoring a stream to its former channel, or to its former width and length, may necessitate destroying live vegetation and pushing material from the stream bed."

Mr. Button: "There are complaints that the work on the Bullpasture is causing siltation downstream through the Highland Wildlife Management Area. But there's a simple natural law that can't be avoided. When you move dirt in water, you'll get muddy water."

How does the "216" program of the Soil Conservation Service differ from the Emergency Conservation Measures program of the ASCS?

Mr. Button: "Before a county can receive funds for either program, the President must declare an emergency exists.

"The SCS directly supervises any '216' work. That is work done under authority of Section 216 of the Flood Control Act of 1950. We say what will be done and how. We have a man on the job where the work is being done. The work currently being done on streams in Amherst and Nelson Counties is under the '216' program.

"The ECM program is basically a farmland and stream restoration project, and is for individual landowner protection, while benefits of '216' work must be of a community nature."

If you don't supervise the ECM channelization work being done on the Bullpasture, who does?

Mr. Button: "A lot of ECM channelization is put in with practically no supervision. We can't always be there. The farmer or landowner is in charge, and the more he can get out of the stream, the better it is as far as he's concerned."

Trout Unlimited charges that the work on the Bullpasture is using Emergency Conservation Measure funds where no real emergency exists. Can you explain why the ECM program is being used rather than a program which has environmental guidelines as the "216" program?

Mr. Blair: "The '216' funds are limited. They are supplementary funds. We try to make use of other funds available first. Putting the guidelines into effect is very expensive. For instance, the guidelines prohibit taking material from the steambed for building dikes, unless the material is in a blockage area. Large amounts of money must be paid to bring material in. It would be impossible to do this on a large scale. We do not have the manpower to supervise nor the funds to provide this kind of channelization work."

How would additional funds for making wider use of your "216" guidelines be made available?

Mr. Button: "A certain amount (\$300,000) goes into the federal '216' program each year. A special act of Congress is required for any additional appropriation."

How much damage does channelization do to a stream?

Mr. Button: "In some of the streams, the force of the flood ruins the bottom-life before channelization ever takes place. A flood is a natural process, and of course the stream recovers. We submit that they recover from channelization too."

Mr. Treumer: "I have heard the idea advanced that a flood is a good thing, that it cleans the stream up. I don't know if it's true. I'm not a biologist."

Will the channelization on the Bullpasture protect the farmers from major flooding?

Mr. Blair: "You cannot prevent major flooding. There's no way—economically, that is. The repair work will carry a 10-year flood, if they're lucky."

Mr. Treumer: "We should point out that the purpose of this channelization is not to protect these farmers from every flood that comes along, but to restore the stream and banks to where they were before the flooding of last October. Call it channelization if you want. It's restoration if you ask me."

Mr. Blair: "I don't care what anyone says—nature has a hard cruel way of taking care of things. Nature gives you an overabundance or an underabundance. If man works with nature, he can pretty generally work things out favorably. If we and the farmers are doing something wrong, and if something can be done to correct it, we'd like to know about it."

"But these people who come and tell us we're doing it all wrong, then offer us no practical, down-to-earth ways to do it differently, or who tell us to 'do nothing,' are no help. They don't have to work with farmers, whose pastures have been flooded. We do. They've got to realize it's people we're working with."

"The biologists are not giving us information we can act with—they're just telling us what we're doing is wrong. Sure, we've got guidelines, but what are they? Just a set of principles subject to many interpretations. I'd welcome anyone who can come up with a practical, workable, down-to-earth way to do this work without harming the stream."

#### CHANNELIZATION "ONLY ANSWER" FOR 2 FARMERS

(Editor's note: Under the Emergency Conservation Measures program of the ASCS, the landowner determines if channelization is needed. News-Virginian reporter Deane Dozier talked with two farmers who decided on channelizing the Bullpasture River where it runs through their land. This report on those interviews is the third in a series on channelization.)

(By Deane Dozier, N-V Staff Writer)

McDOWELL—Leslie Moyers led the way on foot through an empty pasture. He untied a wooden gate which opens to another pasture where the Bullpasture River flows.

Mr. Moyers is district conservation technician for the Soil Conservation Service (SCS) in Monterey.

Following him through the gate were L. S. Button and Clarence J. Treumer from the state SCS office in Richmond and William L. Blair, area conservationist from the Harrisonburg office.

The day was muggy, hot. A gray haze blurred the edges of things, and ran the dulled colors of the hills and trees together. The men had left their jackets in the car.

The gurgling sound of the swift-flowing Bullpasture reached them. "Say, that water sounds good!" said one man. They stepped up on the dike of river rock which flanked the stream.

The river before them had been channelized. The uniform width was about a stone's throw for a five-year-old.

The channel was straight. The water flowed through swiftly, at a uniform depth of about one-to-three inches.

Mr. Button stooped on the rocks at the edge to examine the river bottom. He saw dark green vegetation clinging to some of the rocks. Minnows darted about in the shallows. It was not deep enough for larger fish.

Mr. Moyers, the SCS man who is most closely associated with the Bullpasture channelization, reached down to feel the water.

"How is it?" asked Mr. Blair.

"Too warm for trout," said Mr. Moyers.

To the Virginia Commission of Game and Inland Fisheries or to Trout Unlimited, the sight of this channelized portion of river is an ecological nightmare.

But to the farmer who wants his pasture protected from flooding, the sight brings a sigh of relief.

The relieved farmer on this property north of McDowell was coming through the pasture now. The men heard his pick-up truck as it jounced through the grassy field and they climbed back up the rock dike to meet him.

Ben Armstrong pulled on the brake and jumped down from his truck. Young, suntanned, he reached to shake hands with his visitors. Two small children got out the other side of the truck and stood listening as the grown-ups talked.

"Have you seen where the river washed my land away?" Mr. Armstrong asked the two Richmond men. The other two were familiar with the work.

The farmer pointed upstream, where new grass grew in V-shaped sections on both sides of the river. He explained that the force of the major flood of last October had taken out one side of the river bank as the water plowed around a curve. Coming out of the curve, it crossed over and took out a section on the other side, zig-zagging a new course through the Armstrong field, which is grazing land for beef cattle and sheep.

Besides cutting a wider swath through his land, the flood left silt and debris in the streambed, raising its level, making it easier for smaller floods to overflow the banks.

"Normal spring flooding was no problem to speak of," said Mr. Armstrong, certainly not enough to cause me to channelize. But after the area was torn up last October, just a regular spring flood would take the water over my field, and the grass would be covered with silt. I'd have to wait for another rain to wash it off."

He pulled up a grass shoot at his feet and chewed angrily at the stem.

"Maybe you know about the Game Commission man who didn't like the way this job was done. To start with, I'm not in the fish business. Oh, there'd be fish in here all right, if the fishermen would act right. But I'm not going to put up with them leaving gates open, then standing right there and denying they did it."

He walked up on the dike and down to the river edge. The other men followed.

"This is not a trout stream to begin with," said Mr. Moyers. There weren't any trees along here, no shade, no holes for the fish. But already holes are building and grass is beginning to grow on the rocks."

"The Commission complains there isn't enough oxygen in this water for fish," said Mr. Blair. But look at all the riffles. The whole thing is riffles! That should certainly oxygenate it."

"They argued that the water was too warm, too," said Mr. Armstrong. "But look how fast it's moving. It should be much cooler than water standing in pools. They can say there are no fish in there, but I know better. They're in there."

The second farm the men visited was the farm of Lewis M. Shumate, located about seven miles south of the Armstrong farm and about four miles south of McDowell on Va. 678.

The men all climbed into one truck. The ride down to the river was along rows of corn, separated from the road by an old chestnut rail fence.

As the truck rattled up to the riverbank, a kingfisher flapped away.

At the site of channelization, the visitors found a situation similar to the first—to protect the pastureland from flooding, a high rock dike had been pushed

up on one side from the stream bed by a bulldozer or front-end loader, covering any vegetation except the upper parts of trees. The river flowed through a wide, flat channel in one long curve.

Mr. Moyers asked Mr. Shumate how he felt about the work.

"Unless we get an unusual flood, I think we're in pretty good shape here," said the farmer. His voice was quiet, courteous. "Over the years the floods piled up so much debris and the river bed had gotten so high, that any little flood would send the water into my pasture. My sheep got stranded in the big flood."

The two state SCS men picked their way along the dike upstream to Mr. Armstrong's property line, where the channelization stopped. The landowner next to him had not wanted the river channelized.

There, plants and trees grew close to the riverbank, shading the pool and riffles below. The steambank was irregular, with bends and curves, which was not true of the channelized section. When the two came back, they asked Mr. Shumate about the fishing.

"They're catching fish in here now. But it's just trout. There used to be bass and redeye. But that was more than 20 years ago. They (Game Commission) started stocking trout, and now there's nothing else. And the trout are here just during the short period when they stock them."

"Do you know what those Game Commission men wanted me to do?" Mr. Armstrong suddenly asked. "They wanted me to build a dike through my pasture, about 100 feet in from the river, and leave the river like it was." Fire was kindled in the normally soft-spoken man.

"I couldn't afford to do that! If I couldn't use what was in the riverbed, where would I get the material to build such a dike? Nobody's gonna go and do a fool thing like that! I've never heard of such a stupid thing. I try to keep my farm looking halfway decent."

However, Mr. Shumate had nothing against fishermen who use his property. "I've found them to be pretty nice fellows for the most part," he said.

The day was getting late and the visitors had a long trip home ahead. On the way back to the road, Mr. Shumate gave them a refreshing change of subject. He spoke of how his grandfather had come to this land after the Civil War . . . the farming that had been done since then . . . and how the Shumates had always tried to care for the land the best they knew how.

#### TROUT UNLIMITED GROUP WORKS TO END CHANNELIZATION ON RIVER

(Editor's note: Why is Trout Unlimited opposing channelization of the Bullpasture River? News-Virginian reporter Deane Dozier talked with TU Vice President G. D. "Jerry" Schuder Sr. to find out. This is the fourth in a series on channelization.)

(By Deane Dozier, N-V Staff Writer)

Jerry Schuder loves a winding backwoods stream like some men love an easy chair or a good pipe.

Like a man whose favorite chair wears out or a man who must quit smoking, Mr. Schuder feels something's missing in his life when the natural beauty of a stream is altered.

An active conservationist for almost 20 years, he refuses to sit back and watch changes being made to a woodlands, a stream, a river, if he does not like the changes.

And Mr. Schuder does not like what he sees happening to the Bullpasture River.

As vice president of the Shenandoah Valley Chapter of Trout Unlimited, he has spent hours, days, weeks, researching, writing to legislators and government officials, talking with biologists, reading, learning about channelization and about other ways to repair streams and control flood waters.

Recently, he organized a field trip to investigate the channelization work being done on the Bullpasture River on six Highland County farms.

Going with him on the trip were two men from the state Commission of Game and Inland Fisheries and three men from the U.S. Soil Conservation Service.

At the time of the trip, channelization had been completed on three of the six farms and was scheduled for the other three.

Following are Mr. Schuder's answers to The News-Virginian's questions about his trip:

Mr. Schuder, what is your evaluation of the channelization on the Bullpasture?  
 "At each site where the work had been accomplished, classic gross channelization of the river bed had taken place. The flood channel had been enlarged, the stream course had been straightened, the poor structure destroyed, the stream bed leveled, and high dikes placed along side the stream banks.

"No fish life existed in the channelized sections. The water's oxygen content was reduced and the water temperature was increased. It is greatly feared that the lower quality water flowing from these sections will damage the stream habitat downstream in the Highland Wildlife Management Area.

"Had the Soil Conservation Commission's environmental guidelines been a requirement for this work, all of the sites would have been in violation.

"This is not restoration, as some claim. This is changing a natural stream into an efficient drainage ditch—that's what channelization is."

What will be the effects of this work?

"One of the problems of channelization is that it passes the problems downstream. A farmer with a channelized stream can get rid of his problem at a maximum rate. If the whole headwaters section of a stream is channelized, then at times of heavy rain, when flood conditions are being established, the water passes downstream at a faster rate than it would in a normal stream with bends and pools and other restrictions to the flow. The crest arrives in urban areas sooner and is higher than it would be normally, so the flooding problems are actually increased downstream.

"Channelization is an extreme measure where everyone worries about his little piece of the action without really being concerned about what happens to the fellows downstream. I think that's a legitimate concern."

How much damage had flooding done to the property of these farmers?

"With the exception of Ben Armstrong's farm, the only damage suffered in the floods of the past few years was the temporary flooding of pasture lands with no resulting erosion. On his farm, the stream had relocated its channel along a 70-yard stretch of the river through pasture land.

"In no case was there a threat to life, dwellings or crops.

"On two farms, work was scheduled but not started. Inspection showed that no work was necessary on one and only a 20-foot patch was required on the stream bank on the other. William Blair of the SCS agreed with this judgment, but said the SCS is powerless to stop the work, which would be done in the same manner as the channelized sections."

Who was supervising the work being done?

"The only supervision or supervision of the work being done by equipment operators at these sites was the landowner himself, a person with no knowledge of overall environmental impact, and with a special interest in the project.

"In fact, the work was initiated by a three-man ASCS (Agricultural Stabilization and Conservation Service) district committee, entirely composed of farmers from the area, and work was being done on one of the committee members' farms.

"There had been no environmental review of any kind for the projects carried out by ASCS."

Do you have any suggestions about what should be done?

"Yes, our chapter of Trout Unlimited has made six recommendations which have been sent to representatives of the SCS, the Game Commission and regional and national TU presidents.

"We recommend that all Emergency Conservation Measures (ECM) work being done by the ASCS, the U.S. Army Corps of Engineers, Civil Defense agencies and others in Virginia be halted pending an environmental review. This review should be done by a group representing a balance of agricultural, environmental and other interests.

"We recommend that legislation allowing ECM work be amended to require adherence to environmental guidelines similar to those of the SCS '216' program.

"A state committee should be formed to coordinate the activities of all agencies engaged in stream alteration or 'repair.' This committee should be composed of a balance of agricultural, business, industry, wildlife and conservationist interests.

"Also, all work in process should require supervision on the site by competent watershed experts, and the sections of streams already channelized should be reworked to restore the pool structure and the stream bed habitat.

"We think interested organizations, as Trout Unlimited, should be given the opportunity to review all stream projects during the planning stage."

What stand will your organization take in environmental review of stream projects?

"Trout Unlimited is launching a state-wide campaign to stop channelization where no guidelines are in use. However, we are not a no-compromise organization. We realize farmers and other landowners have a problem. But there are better, less destructive ways to prevent flooding than those being used. We are for proper flood control measures."

#### COMMISSION WON'T STOCK CHANNELIZED STREAMS

(Editor's note: The Virginia Commission of Game and Inland Fisheries is so strongly opposed to channelization, that it will no longer stock trout in channelized streams. The reasons are explored by News-Virginian reporter Deane Dozier in an interview with a Game Commission biologist. This is the fifth in a series.)

(By Deane Dozier, N-V Staff Writer)

RICHMOND—There's not much about a stream that Raymond V. Corning can't tell you.

Mr. Corning, who is fish management coordinator for the Game Commission in Richmond, has spent a large portion of his life studying stream life.

He earned a BS degree in fisheries management and MS in zoology from Colorado State University. His master's thesis was on the effects of channelization and sedimentation on stream life.

He has spent four years with the Idaho Fish and Game Department, and eight years with the Virginia Game Commission.

The effects of stream channelization on the environment are complex. But Mr. Corning goes to great lengths to unravel the scientific data, bring it down to earth, and make it meaningful and usable by laymen.

Here are his answers to The News-Virginian's questions on the subject:

Mr. Corning, how does a channelized stream differ from one that is untouched?

"The normal path of a stream is not a straight line, but a random process of rather sharp curves. Draw a straight line between two points, and a normal stream may travel from two times to five or eight times the distance between those points because of its winding path.

"When you channelize, and straighten out that path, you've reduced the area of stream for fish and other aquatic life, and you've speeded up the current.

"A natural stream has a slow-moving area of pools interspersed with faster-moving shallows or riffles. In channelization there is usually more riffle than pool. The principal feeding area for trouts is in this riffle area, but they need the pool area for cover, hiding places and resting.

"Also, there is a physical phenomenon that takes place in channelization. A channelized stream is usually made wider than a natural stream because they build a channel to take the floods and don't worry about what happens when low flow comes. Therefore, more surface area of the water is exposed to sunlight and the water temperature rises.

"Secondly, the water speed decreases during this low flow period as the water is spread over the wider area, so it is exposed to the sun for a longer time. If vegetation has been covered up or removed where there was, let's say, 50 per cent shade, you've doubled the amount of sunlight on the water. Coupled with these other facts, you may have quadrupled the amount of sun. And as the temperature of the water rises, it is able to hold less dissolved oxygen which stream life needs.

"I should also point out that it is not normal for a stream to remain forever within its banks. A stream naturally changes its course over the years."

How effective is channelization as a flood control measure?

"By straightening out the stream channel and shortening the distance, you're actually building up energy in the stream that would not otherwise be there, unless you 'armor plate' the channel in some way.

"Take Amherst and Nelson counties, for instance, where virtually every stream has been channelized. Let's say we've reduced the total length of streams by one half within the total watershed, so that the water falling during a storm should get downstream in a decreased time.

"Now, let's say we widen the stream at the same time to carry a great quantity of flood runoff, so that what once took two days for the flood crest to be reached and pass downstream, now takes maybe just a few hours.

"You did not modify the area down below, so damage downstream is intensified. It stands to reason that if you decrease the time upstream and increase the volume coming downstream, the conditions will be more severe downstream.

"So you may protect the man up above and increase damages to the man below. If you do this for the entire James River Watershed, what can you expect but flooding at, let's say, Richmond."

Are you saying that channelization is not a deterrent against major flooding?

"Unfortunately, the question is highly debatable. The Soil Conservation Service couldn't answer that question at the hearings in Washington, D.C., about two years ago, because they had never studied to see if what they said would occur ever did occur.

"This, to me, is one of the greatest deficiencies of this whole subject of channelization—that very few intensive studies by the agencies carrying on these activities have ever been carried out either to document or verify what they are doing or to show the negative aspects.

"I think what is being done on the Bullpasture River in Highland County shows this point. It depends on the decision of the landowner and the operator of a bulldozer as to how the work is done. I would ask these questions: Is everyone there concerned about the environment? Is everyone who crawls on a bulldozer capable of deciding just what is the proper way to go about protecting against flooding? I think you'd have to say it's highly debatable."

The SCS suggests that a stream should recover from environmental effects of channelization just as it does from a flood. Would you comment on this?

"But a flood is a temporary and natural phenomenon, and not a continuous one as channelization is. A flood leaves pools, turns and bends and hiding places for stream life, which channelization does not leave. Depending on the soil type, major storms which occur, and the degree of channelization it may take as long as 50 years for a stream to recover."

Is there any way to protect downstream life during channelization work?

"It is rather questionable as to what extent that can be done. In our opinion, you should not be working in the stream to that extent anyway. You're virtually destroying the whole stream for a period of many years."

Who is affected, besides fishermen, when a stream is destroyed?

"I think anybody looking at a stream would prefer to see this winding, natural look rather than just a straight channel. You would like to see a kingfisher sitting on a tree along the stream bank, rather than no tree and no kingfisher.

"It's a loss of what I would term our ecological heritage. If you're satisfied with trying to turn our outdoors into an artificial thing like so many of our big cities, then I guess it's okay, but then my question would be—why do so many of our people move out of big cities?"

#### ALTERNATIVES TO CHANNELIZATION PROPOSED BY CONSERVATIONISTS

(Editor's note: Stream channelization is stirring up controversy across the state and nation. Are there ways to channelize without harming the environment? Are there other answers to flood control? News-Virginian reporter Deane Dozier asked those opposed to channelization to suggest alternatives. This is another in a series.)

(By Deane Dozier, N-V Staff Writer)

From one side of the stream, the farmer pleads: "But my sheep were stranded in the big flood, I've got to do something."

On the other side, the biologist warns: "A cement-lined channel from the headwaters of our tributaries right on down to the ocean—that's the only way channelization will help you."

Do nothing? Or channelize completely. These are the extremes. Is there no middle ground?

The government agencies, helping with the work, are in the middle, and looking for alternatives. They hear conservationists and biologists telling them channelization is destroying the stream, and that flooding may be made worse, especially for those downstream.

The farmers and government workers ask what else they should do. They get no practical alternatives, they say, or are told to "do nothing."

The News-Virginian asked this same question, and was furnished this list of alternatives from Trout Unlimited:

1. Trout Unlimited is for proper zoning and land use practices of the flood plain, which would help to prevent the problem in the first place. The flood plain should be reserved for industries designed to be flood proof, for recreation and

for agriculture. A compatible agricultural use in an area frequently flooded is for pastureland, not cropland.

2. Trout Unlimited feels reinforcing eroding banks by facing a particularly bad bank with rock fill is a legitimate measure.

3. Trout Unlimited feels removing debris left from flooding is legitimate if the debris is blocking the stream channel.

4. Trout Unlimited feels repairing places where the stream has changed its channel is a legitimate measure.

5. Trout Unlimited favors planting banks with witholding vegetation such as basket willow.

6. Building a "dry dam" is a good solution in an area subject to frequent flooding. Generally an earthen dam like the Soil Conservation Service's flood control dams, a dry dam has minimum impact on an area at times when there is no flooding. It is built with pipes underneath to pass the normal stream flow and normal spring run-off without building up a reservoir. But in major flooding, the reservoir would fill and back up, temporarily, upstream. It fills slowly and recedes slowly, like a bathtub. It has no velocity and would not damage a crop of corn like a stream overflowing its banks.

Ray Corning of the state Commission of Game and Inland Fisheries was a member of the committee which devised and submitted the guidelines for channelization under the SCS "216" program. Asked if the guidelines were sufficient, he said:

"They are certainly not sufficient in the current form. The state committee which worked on it initially and submitted it to the SCS is now revising the guidelines. We knew, having never had experience with guidelines, they would need modification. I think the SCS also recognized this. We have no idea whether our recommendations will be adopted. They certainly are a step forward."

Mr. Corning was also asked to suggest alternatives. On his list were:

1. Zoning—County ordinances should be adopted and planning should be done through planning commissions to designate flood water areas for purposes that won't be greatly affected by flooding. Any homes built in flood plains should have foundations that will allow a 100-year flood to pass without affecting it.

2. Replace forested areas—Some U.S. Forest Service figures show major clear-cutting has increased stream flow by about 30 per cent. The reason? Water runs off bare ground faster than off ground with trees and vegetation to hold it back.

3. Riprapping (shoring up of stones)—Material should be placed in bends of streams likely to erode. One good reason for bringing material in from an outside source rather than taking it from the stream bed, besides to protect aquatic life, is that if it's small enough to have been transported there in the first place, it's probably small enough to be washed away again.

4. Protect vegetation—Prevent cattle and other animals from grazing along stream banks, removing protective vegetation.

5. Environmental review—Almost none of the work being done now, as work in Amherst and Nelson counties, for instance, would be possible if it were subject to environmental review, but it comes under "emergency" funding and is not subject to review. Mr. Corning said, "Over the past few years virtually all other requests of the SCS for stream channelization were shot down by the environmental review process and were not carried out."

6. Sit back and wait—A stream always carries gravel and sand downstream, and not all at once. The bottom is constantly shifting. So if the bulldozers would sit back and wait a little while, the next, let's say, five-year flood would move that material out and take it downstream.

7. Train equipment operators—Provide a few classes about what are acceptable and unacceptable practices, in detail, and pay the bulldozed operators for attending.

8. Plant eroded areas—If these areas were seeded with grasses and shrubs, such as willow, these would protect and stabilize the banks once the root system developed, and stop some of the force of the water when the stream jumped its banks.

Farmers and SCS workers said they had insufficient funds for bringing fill material in. Mr. Corning said:

"These emergency funds were not designed for long-term protection, but merely to restore the stream to the condition that existed immediately prior to the flood. This, to us, is an improper way to do it. We feel you should look at the long-term conditions and yes, it might be more costly, but there are other funding sources,

such as some of the SCS programs where virtually all the costs are accrued by them and not by the farmers.

"When the SCS does not have funds to supervise and provide work according to the guidelines on a large scale, then it becomes a question of, if you can't do it right, should you do it at all? I think this is something that should be explored."

What implications does the channelization issue have for Waynesboro and Augusta County?

The issue is not entirely a new one. Channelization has already been done, to varying degrees, on some area streams, including Back Creek. The News-Virginian questioned a farmer, a homeowner, and a businessman and professional ecologist who hunts and fishes on Back Creek about the channelization work which was done there about 12 years ago.

The farmer, Leonard Lucas, came out in his back yard to talk. "Well," he said, "they got permission to do it last time, but they wouldn't get it again. I didn't know this would happen."

He said the stream had been straightened and the banks had continued to erode away since the channelization work. The stream width was double what it was before channelization. An old walnut tree near the bank had finally been washed away. "If they don't come back and do some more work, I'll lose that shed too," he said, indicating an outbuilding on the bank.

A Sherando homeowner said, "It was a mistake here, too. We wanted it because we thought putting rocks against the bank would keep our children from falling in. I will say it helped in one case where a house was sitting right next to the stream, and they curved the channel away from that house, but that's maybe an isolated case."

The businessman-ecologist said, "I know of places that were 15 feet wide and now they're 65 to 70 feet. When you take the roots off the bank, you've got nothing to hold the banks and they just keep eroding."

Asked what alternatives Waynesboro and Augusta County, specifically, might have to channelization, both the Trout Unlimited spokesman and the Game Commission spokesman encouraged extensive research.

Mr. Corning urged "a comprehensive review of the watershed and of how to minimize stream flow through the area during storm periods and how to spread that flow over a maximum period of time."

"What's happening in your area and other places in Virginia is being looked at not just there, but across the nation as well," he said.

"I just hope we can avoid a situation in Waynesboro where bulldozers start in before everyone realizes what the consequences of this sort of work can be," said Jerry Schuder of Trout Unlimited, who added:

"In reviewing the situation, I think we'd be wise to study a recent precedent-setting case in Wisconsin, where a conservationist filed suit against private landowners who were channelizing. The Supreme Court found in favor of the conservationist, stating, 'An owner of land has no absolute and unlimited right to change the essence of the natural character of his land so as to use it for a purpose for which it is unsuited in its natural state and which injures the rights of others.'"

Is sufficient information available about channelization to go ahead with it under emergency programs?

Are alternatives to channelization practical? What are the results of leaving a stream alone weighed against what is known and not known about channelization?

These are questions area residents and landowners across the state will have to decide—perhaps in the not too distant future.

#### CHANNELIZATION: WHAT IS DUE FOR THE AREA?

(Editor's note: The pros and cons of stream channelization have been discussed in six articles by News-Virginian reporter Deane Dozier. To what extent is channelization being done in the South River watershed? What else is being done for flood control? Here is that report.)

(By Deane Dozier, N-V Staff Writer)

#### RAIN, RAIN, GO AWAY, COME AGAIN SOME OTHER DAY

The poem has been sung and chanted by children, faces pressed up against rain-streaked window panes, for ages. Perhaps, if they could have it their way, it would never rain.

But adults know—especially this time of year—how necessary rain is. But when it rains, and rains, and keeps raining, they also worry.

Those who live in the South River watershed area know what unceasing rain can mean. Three floods in the past five years have shown them.

Farmlands along the South River and its tributaries have been under water. Homes in low-lying Sherando have had Back Creek knocking at the back door. Club Court residents in Waynesboro no longer wait for South River to rise to their doorsteps before they cart their belongings upstairs.

But, as Wayne Hypes, district conservationist with the U.S. Conservation Service, points out, many flood control measures have already been taken for the South River watershed area. Others are planned for the near future.

Some of these measures are fully approved by every one. Others—and channelization is a prime one—are under attack by certain organizations.

Which measures are approved by all? Which are questionable?

#### FLOOD CONTROL DAMS

Twelve flood control dams now exist on the tributaries of South River and Back Creek. These have a storage capacity of about two billion gallons of water, or in SCS terms, about 6,000 acre-feet. This figure may not mean much to a layman, until compared with the amount the dams held back in the Camille and Agnes floods. The dams held about 4,900 acre-feet in Camille and 5,500 acre-feet in Agnes, which is below their total capacity in both cases.

Trout Unlimited, one organization opposed to channelization, is in favor of the "dry" flood control dams, which allow the passage of normal stream flow, but back up during flooding. One of these 12 in the South River watershed is a "dry dam," because the area in which it was built will not hold water. The others range from a four-acre lake to a 13-acre lake.

Mr. Hypes feels flood control dams are the number one way to prevent serious flooding, but adds, "It doesn't make any difference to the SCS whether they're dry or not. It's up to the landowner, and they usually ask us to build it so they'll have a lake for recreational purposes."

Mr. Hypes said that without the dams the floodwaters would have been 18 inches to two feet higher in Waynesboro in the Camille and Agnes floods, and about three feet higher in Sherando.

"The original watershed plan for South River called for 17 structures," said Mr. Hypes. "Three cannot be built for various reasons. We are still working hard to get land rights for the proposed Jones Hollow Dam and Mt. Torry Furnace Dam. There are just not any more suitable flood control dam sites on South River or Back Creek or their tributaries. We have studied the possibilities thoroughly."

#### LAND USE PRACTICES

Both organizations interviewed as opposed to channelization in this series (Trout Unlimited and the Virginia Commission of Game and Inland Fisheries) said "zoning and proper land use practices" was their first alternative to channelization as a flood control measure.

Mr. Hypes also listed "proper land use and planning in the watershed area" as a high priority on his list. "Anywhere you have paved areas, roof tops, parking lots, streets, and so on, you're adding to the area that will not hold water," said Mr. Hypes. "When this area is near a stream, all this water runs off into the stream and adds to the floor hazard."

The Soil Conservation Service, at the request of the South River Watershed Flood Control Commission, recently made a flood hazard analysis of the South River basin to delineate areas subject to flooding. The purpose? So that adequate zoning ordinances can be adopted.

#### CHANNELIZATION

"The original watershed plan had some channelization work in it for South River and Back Creek," said Mr. Hypes. "This was done in the early 60s. To me it was a good job. We used wire baskets filled with rocks across the stream in places to slow down the rapid flow of water. But due to the high iron and magnesium content of the water, the wire deteriorated very rapidly. In other streams where this wire was used, it still looks good after 15 years.

The SCS channelized Back Creek and did "clearing and snagging" work on South River work as a flood preventive measure in the early 60s. In the clearing

and snagging work, bulldozers worked from the bank to pull brush and trees out of the river. The shape of South River was not altered in any way, according to Mr. Hypes. "This project, to me, was very successful," he said. "I've had no complaints about it, and we've had two floods since then."

The soil conservationist said he feels the work done straightening and clearing Back Creek helped control flooding for landowners on the creek. However, he said he would "go along with the idea" that channelization might cause worse flooding in downstream areas. "But I don't think that's ever been proven," he added.

After the Camille flood of 1969, bulldozers again worked in Back Creek to clear out logs, gravel bars and rock bars from the flood. Also, work was done in South River to "eliminate bottle necks, stabilize the channel, and enlarge it in some places," according to Mr. Hypes.

Repair work under the SCS "216" program is being planned now for Back Creek. "The contract has already been let, but we won't get to it for about a month," said Mr. Hypes. "We thoroughly want to follow the environmental guidelines for "216" work. After all, the SCS is a conservation organization, and we have made many contributions to conservation. We have discussed the best way to do this work with the guidelines committee, and I gave in to them almost 100 per cent on their recommendations."

Mr. Hypes said no "216" work is being planned on the South River. "We decided that if any work was to be done there, it would have to be on an individual land-owner basis under the Emergency Conservation Measures program of the Agricultural Stabilization and Conservation Service," he said.

"Let me add, while we're on the subject of channelization—and this is not to say channelization is not beneficial—that we think flood control dams are a better place for the taxpayers to put their money," said Mr. Hypes.

#### INVESTIGATION

Both Trout Unlimited and the Game Commission encourage intensive and thorough investigation of the entire South River watershed before flood control measures are decided upon, and before any more channelization is done.

Waynesboro and East Augusta County have been involved in investigative work in the following ways:

—In July of last year, a six-member Flood Control Commission was appointed by the mayor of Waynesboro and charged with the task of finding ways to prevent flooding in the city. Last January, the Commission took on members from Augusta County and became the South River Watershed Flood Control Commission.

—The members have investigated the possibility of building more flood control dams on South River tributaries.

—They have obtained the services of the Soil Conservation Service in studying the river basin and defining the flood plain.

—They worked hard to get the South River watershed designated by the Virginia General Assembly as the state's first pilot flood plain project.

—An eight-member State Task Force was named to assist the commission in its efforts. On the task force are two commission members along with representatives of the Division of State Planning and Community Affairs, the Soil and Water Conservation Commission, the State Water Control Board and the Commission of Outdoor Recreation.

—The Task Force has been at work developing proposals for flood control which will be discussed at a meeting Sept. 11. Shortly after that, the Commission will meet again to discuss the proposals.

What is the future for flood control in Waynesboro and East Augusta County? What is the future for the area's streams?

Until decisions are made, both those who need flood control and those trying to protect the streams will keep their children at home, noses pressed against the window, saying, "Rain, rain, go away. . . ."

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#### EXHIBIT 4—CONTROVERSY DOCUMENTATION

##### POSITION ON STREAM CHANNELIZATION, SEPTEMBER 22, 1973

Whereas it has come to the attention of the Conservation Council of Virginia that stream channelization in Virginia continues to be carried out at an alarming and accelerated rate by the U.S. Soil Conservation Service, the U.S. Agricul-

ture Stabilization and Conservation Service, the Corps of Engineers, the Virginia State Highway Department, and local governments, and

Whereas it has also been reported that the Guidelines formulated by a State Committee appointed by Secretary Rowe are being violated, and

Whereas channelization continues to be exceedingly destructive of natural waterways and their banks and floodplains, and

Whereas it creates exceeding erosion and sedimentation, and

Whereas it is exceedingly destructive of native flora and wildlife and their habitats, and

Whereas it increases the frequency and intensity of flooding downstream, and

Whereas it reduces the "conservation low flow" during dry periods, and

Whereas it is also detrimental to the natural beauty of Virginia, and

Whereas the stream rehabilitation management task force does not seem to have prevented continued violations, and

Whereas there are presently no provisions for an environmental impact process in the decision to channelize streams,

Now therefore be it *Resolved*, That the Conservation Council of Virginia requests Secretary Rowe to request those agencies listed above to cease and desist their channeling activities, except in the clearest cases of immediate emergency or for restoration of privately owned crop and pasture lands, until such time as an authoritative study can be made of the full channelization, and

Be it further *Resolved*, That the Council requests Secretary Rowe to establish an environmental impact process with full disclosures at public hearings in the case of each decision to channelize, and

Be it still further *Resolved*, That the Council requests Secretary Rowe to enforce the observance of the Guidelines for Work Performed under Section 216, Flood Control Act of 1950 (Public Law 516.)

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#### EXHIBIT 5—PARTIAL ANSWERS TO THE STREAM MODIFICATION CONTROVERSY IN VIRGINIA

##### ECOLOGY UNIT ASKS POWER TO ENFORCE

(By David D. Ryan)

A group of state officials told an aide to the governor here yesterday that their efforts to minimize environmental damage during stream channelization are hampered without enforcement powers.

The four officials told Maurice B. Rowe, secretary of commerce and resources, that a permit system is needed to control the stream projects.

"What you are saying basically is that we need some statewide permit system that can be enforced by an agency, regardless of whether the project is an emergency or nonemergency," Rowe said in response to the officials' comments.

Those meeting with Rowe were Joseph B. Wilson Jr., director of the State Soil and Water Conservation Service, Michael A. Bellanca, director of the State Water Control Board's Bureau of Surveillance and Field Studies; Ray Corning, fish management coordinator for the Commission of Game and Inland Fisheries, and Gerald L. Stokes, a planner with the Outdoor Recreation Commission.

They were designated by Rowe last winter to work with the federal Soil Conservation Service to oversee controversial channelization projects that the conservation service was conducting in conjunction with an "emergency" flood cleanup as a result of two floods last year.

After an hour meeting, the task force officials and Rowe decided to:

Wait for a review by the attorney general's office on whether the water control board can require permits for stream channelization projects. If such permit authority exists, the committee insisted that it should give localities help in planning the projects and in following up in the field.

Review all programs that would allow stream work in order to determine how many projects should be the concern of the committee, and what other state agencies should have representatives on the task force. The Virginia Marine Resources Commission and the Virginia Institute of Marine Sciences were mentioned.

Begin an extensive program on the local level to educate landowners about the potential damage that can occur from channelization, which involves everything from clearing debris from streams to widening and deepening a stream to increase the water capacity it or the drainage area can hold.

EXHIBIT 6—VOLUNTARY GUIDELINES ADOPTED BY THE VIRGINIA S.C.S. AFTER  
SUBSTANTIAL CRITICISM. GUIDELINES WERE MAINLY BASED ON THOSE PROPOSED  
BY A 4-STATE AGENCY TASK FORCE

U.S. DEPARTMENT OF AGRICULTURE,  
SOIL CONSERVATION SERVICE, STATE OFFICE,  
Richmond, Va., February 9, 1973.

Watersheds Memorandum VA-19

From : David N. Grimwood, State Conservationist.  
Re Natural Disaster—Use of "Section 216 Funds".

The purpose of this memorandum is to establish basic policy, guidelines, and procedure for doing emergency repair of damage resulting from Tropical Storm Agnes and from the October 1972 storm with funds allocated under authority of Section 216 of the Flood Control Act of 1950. Memorandums DEF-VA-6 and DEF-VA-7 and Advisories DEF-VA-5, 6, 8, and 9 are hereby cancelled.

Use of these emergency funds is authorized under the following conditions :

*A. An emergency exists if*

1. A watershed is impaired suddenly by fire, tornado, hurricane, earthquake, or other natural causes, and
2. Lives and property are endangered from further floodwater, erosion, or sediment discharge as a direct result of the impairment.

*B. Type of work*

Reports and observations indicate emergency repair work with these funds generally should be confined to the following :

1. Repairs to impoundment structures and channel improvement work constructed under authority of P.L. 566 and P.L. 534 (including Pilot).
2. Removal of stream channel blockage created by accumulation of trees, stumps, sediment deposits, and other debris of this nature, which if not removed will create a community hazard. Debris will not be burned by the Service. Work will be confined to streams with drainage areas less than 250,000 acres unless prior approval has been given by the State Conservationist.

*C. Conditions essential for furnishing aid*

1. Assistance is required to supplement maximum effort from other sources.
2. The proposed work or project is of sufficient magnitude to justify an hourly rental contract. Benefits must be of a community nature. Damage to single landowners is to be considered in the realm of Emergency Conservation Measures under REAP.
3. Work is to be confined to countries designated as "Disaster Counties" in one or both storms mentioned above.
4. Repairs to small watershed structures should be initiated by a request to the Service from the sponsor responsible for maintenance. No work permit is necessary.
5. Other work will be considered only upon receipt of a "Request and Permit for Channel Repair" completed by the landowners involved and concurred in by the S&WCD's and the Service.

*D. Responsibilities of the district conservationist in organizing proposed work*

1. Divide requests into proposed projects for contracting purposes. The limits of each project are to be delineated on a suitable map or drawing, along with a general description of the types and amount of work in each project.
2. Prepare estimates for each project containing the following :
  - (a) Types and amounts of equipment and materials needed to perform the work.
  - (b) Number of hours for which each piece of equipment is to be rented.
  - (c) Unit costs for renting each piece of equipment and for all materials to be purchased.
3. Prepare a brief description for each proposed project and the emergency work which is planned. The district conservationist should make these descriptions available to the Advisory Team members and to the public on demand. Environmental concerns should be noted in the description. This project statement, to be filed for official record, should be accompanied by representative photographs of the proposed work area. Likewise, documentary photographs should be made of representative sections of completed work. Wherever possible, these should be "before and after" photographs of the same area.
4. Screen projects and recommend elimination of any that do not qualify.

5. At this point, invite in writing, the local Advisory Team (see Sec. E) to meet and review proposed project(s) and plans. Changes suggested and generally concurred in by this team should be made if they are within authority and policy of the Act and in keeping with procedures and guidelines contained below. Unresolved opinions from advisory team members should be recorded and forwarded to the State Office with other project information.

6. Have projects listed (if there will be more than one in a county) by priority for contracting. The priorities are to be set by the S&WCD on a county basis.

7. Transmit a copy of all information noted above to the Area Conservationist for review, concurrence, and forwarding to the State Office.

#### *E. Procedures in developing and planning work*

The District Conservationist will request help in planning stream restoration work from the Area or State Office as needed. In addition, he will invite representatives of the following agencies and groups to participate as an "Advisory Team" to help plan the necessary work: Soil and Water Conservation Districts, County Board of Supervisors, Commission of Game and Inland Fisheries (see attached list), Extension Service, Virginia Division of Forestry, Agricultural Stabilization and Conservation Service, and others as may be appropriate.

The Commission of Game and Inland Fisheries has indicated that where guidelines herein are followed they do not necessarily wish to review jobs involving stream sections of less than 100 continuous yards, or less than 400 yards of noncontiguous excavation per half-mile of stream channel. They should, however, be invited to review all jobs so that they will have an opportunity to express their opinion and a special effort made to get their concurrence in plans that may deviate from the following guidelines.

If any agency representative wishes to appeal, he should be advised to do so in writing through agency channels.

#### *F. Guidelines for stream restoration work<sup>1</sup>*

##### *1. Channel excavation and streambank sloping*

(a) Channel excavation shall be limited: (1) to localized stream reaches where gravel, rock, or sand deposits have significantly reduced channel capacity as compared to pre-flood capacity and which if not removed will result in further cutting, silting and widening of the stream channel; or (2) to affect a return of streamflow to the pre-flood stream channel in instances where a new channel was scoured and where the return of such flow is deemed desirable from the standpoint of environmental and other considerations. Although property boundaries will be considered, return of streamflow to pre-flood channels shall not be performed solely for purposes of property line restoration.

(b) Where channel excavation is performed, such excavation shall provide for stream cross-sectional dimensions and length comparable to the original pre-flood cross-sectional dimensions and length where such can be determined. Where the original cross-sectional dimensions and length cannot be ascertained, the excavation shall provide for a channel cross-section comparable to that found immediately upstream and downstream from the area of excavation.

The channel length shall be approximately the same length as the original channel (topo maps and aerial photos will be helpful when available).

(c) Live, rooted vegetation on streambanks shall not be destroyed unless actually contributing to channel blockage problems due to unstable root systems. It would be desirable that trees selected for removal be marked by the Soil Conservation Service in time to allow for an evaluation by members of the Advisory Team or affected landowner.

##### *2. Debris removal*

(a) Accumulation of logs or other flood deposited debris shall be removed where such deposits significantly reduce channel capacity and have resulted in flow diversion so that bank cutting or stream channel widening has occurred.

<sup>1</sup> These guidelines were developed as a result of consultations between a committee of representatives of agencies of the State of Virginia and the Soil Conservation Service.

(b) Debris blockages shall be removed wherever practical by operating from the streambank.

(c) Sloping of banks shall be limited to those areas where vegetation cannot be established on existing bank conditions, or rip-rapping is deemed not feasible, or rip-rap material is not available. The minimum side slope necessary to meet the above will be utilized. Such sloping shall not be utilized to increase stream bottom widths.

### 3. Rip-rapping and stabilization

(a) Cobblestones and similar materials utilized as rip-rap should not be obtained from stream channels unless affected sections have been excavated as a result of the existing emergency.

(b) Eroding streambanks which endanger lives or property and which have failed to establish vegetative cover and areas disturbed during restoration work should artificially vegetated as quickly as possible, normally within 30 days after work has been completed in that area. In localized situations where the establishment of protective vegetative ground cover is not possible, or where such cover is deemed incapable of protecting banks against further cutting (such as on the outside curves or eroding stream channel) bank rip-rapping should be utilized.

### G. Timekeeping and reporting:

Appropriate time of all employees should be charged against this fund. Such time should be coded on AD-320A as follows:

Financial project 303, activity code as appropriate, applicable code for the location where the work is being done, project code 5000. No allotment of man-days is being made. Notice will be given when funds are exhausted.

The District Conservationist is to keep in close contact with his Area Conservationist and request help as needed. The AC should do likewise with the State Office.

The State Administrative Officer will have similar responsibilities for contracting, appointment of Government Representative, etc., as in the watershed program.

The Assistant State Conservationist (Watersheds) is designated coordinator of this work at the state level.

[Attachment.]

### COUNTY ASSIGNMENTS FOR COMMISSION OF GAME AND INLAND FISHERIES BIOLOGISTS WHO WILL ASSIST IN THE EVALUATION OF EMERGENCY SCS WORK

*Counties.*—Amelia, Charlotte, Powhatan, Prince Edward, Mecklenburg, Nottoway, Luenburg, and Brunswick. *Commission biologist.*—Raymond V. Corning, 4010 W. Broad Street, Box 11104, Richmond, Va. 23230. Telephone No. 770-4974.

*Counties.*—Shenandoah, Alleghany, Bath, Frederick, Warren, Augusta, Page, Rockingham, Albermarle, Goochland Amherst Buckingham, Nelson, and Rockbridge. *Commission biologist.*—John Kauffman, 245 Colonnade Drive, Apt. 1, Charlottesville, Va. 22901. Telephone No. 296-4731; [REDACTED] (home).

*Counties.*—Caroline, Culpeper, Fairfax, Fauquier, Fluvanna, Greene, King George, Loudoun, Madison, Orange, Prince William, Stafford, Louisa, and Spotsylvania. *Commission biologist.*—Norville S. Prosser, Route 8, Box 19, Fredericksburg, Va. 22401. Telephone No. 825-1575; [REDACTED].

*Counties.*—Campbell, Halifax, Botetourt, Craig, Franklin, Henry, Pittsylvania, Roanoke, and Bedford. *Commission biologist.*—Dennis Manuel, Route 5, Box 441, Roanoke, Va. 24014. Telephone No. 345-0781; [REDACTED].

### EXHIBIT 7—GUIDELINES AND 216 LAW INTERPRETATION CONTROVERSIES

Objections to the proposed 216 work, either because of differing interpretations of the law covering the S.C.S. Section 216 emergency protection programs, or to differing interpretations of guidelines adopted by the Virginia S.C.S., were summarized as follows on October 26, 1973:

TABLE 1.—TABULATION OF GAME COMMISSION STAFF RESPONSES TO SCS REHABILITATION PLANS WITH REGARD TO SEC. 216 WORK

Stream	County	Total work area (feet)	Modification requested or elimination sought by percent (percent of total stream length involved in controversy)
Tye River	Nelson	29,930	13
Piney River	do	10,700	26
Ruckers Run	do	27,400	18
Dillard Creek	do	8,970	0
Buffalo River	Amherst	91,600	11
Horsepen I	Charlotte	750	0
Horsepen II	do	2,000	50
Several streams combined	Goochland	9,000	0
Do	Buckingham	12,400	8
Do	Augusta	96,500	2
Rapidan River	Orange	500	20
Do	Madison	6,000	6
Swift Run	Greene	5,000	6
Bull Run <sup>1</sup>	Prince William	(?)	38
Rockfish River (main stem) <sup>1</sup>	Nelson	6,800	85

<sup>1</sup> Reviewed after Buffalo River work completed; major differences in guideline interpretations and original intent came to light at this time. Previously requested modifications would have been increased substantially had it been known at that time how field personnel were interpreting guidelines and actually carrying out field activities.

<sup>2</sup> 112 work sites.

<sup>3</sup> Apprehension expressed rather than specific spot disagreements.

Note: Mean frequency of disagreements excluding Bull Run and Rockfish (main stem) equal 9 percent.

## EXHIBIT 8

## COMMONWEALTH OF VIRGINIA

## COMMISSION OF GAME AND INLAND FISHERIES

Memorandum to: Ray Corning.

From: John Kauffman.

Date: June 7, 1973.

Subject: 216 projects.

Past objections to various segments of "216" projects were reviewed and can be placed in two general categories; 1. differences in interpretation of the guidelines and 2. violations of the guidelines.

Differences in interpretation have been:

1. Excavation of stream channel when channel capacity was sufficient. This problem has been outlined in Norville's previous letter of April 14, 1973 and has occurred in the following areas. 3a of Buffalo River, 11 of Tye River, 11 of Piney River, and 3, 5, 7 and 18 of Rucker's Run. Norville's letter also raised the integral question of realignment of the stream flow within the channel.

2. Failure to mark trees selected for removal occurred in Charlotte County and Sawmill Run in Augusta County.

Violations and guidelines:

1. The plan for Sawmill Run in Augusta County proposed to increase the channel capacity over that which existed prior to the flood. The proposed work would result in the removal of live stable streamside vegetation, a violation of the guidelines.

2. Stream channel straightening is a part of the plan for Back Creek and Ramsey's Draft, both in Augusta County. The plans for both areas involve the removal of a point of land on the inside curve. The result of the proposed work would also remove stable vegetation, a violation of the guidelines. Straightening was also proposed in Charlotte and Buckingham County work but was later withdrawn by the S.C.S.

There are several points which should be incorporated in future guidelines.

1. Seeding and mulching should be done in place of seeding only. Seeding and mulching are standard practices of the Dept. of Highways. The Thomas Jefferson Soil and Water Conservation District in their "Handbook for Albe-

marle County" and the Northern Virginia Soil and Water Conservation District in their "Erosion and Sediment Control Technical Handbook" recommend mulching in all areas to be seeded.

2. Establishment of woody vegetation should be planned in addition to herbaceous plants.

3. A survey of the various project plans reviewed illustrates the variety of formats that were used. The Amherst and Nelson county plans had the best format for field review of the project and provided the best description of work planned. The lack of detail in the project plans for Alleghany and Augusta counties, made review of projects difficult and the work plan obscure. Any objection to a segment of the plan made future reference to the area in question difficult. Delineation of the plan into areas would have made future references to the areas in question easier to find.

4. Equalization of votes. As the advisory committee now stands, local interest views are in the majority. This was shown by the fact that our agency was the only one which questioned or raised objections to any of the projects reviewed.

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EXHIBIT 9

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
Charlottesville, Va., March 8, 1973.

Mr. WARREN FRIEND,  
Soil Conservation Service,  
P.O. Box 470, Amherst, Va.

DEAR MR. FRIEND: The Piney River project was reviewed following the criteria and guidelines as set down in Watersheds Memorandum Va.-19.

The extent of the damage in this watershed's very unusual situation does not negate the guidelines and in situations where there is more than 300 feet of excavation, sloping or rip-rapping this necessitates critical review of the proposed work plan.

Several of the areas of the proposed plan do not comply with the guidelines for application of 216 funds. These areas are:

Area 1. The channel capacity is sufficient and does not comply with section B or section F-1 of the memorandum.

Area 11. The channel capacity is sufficient and stream bed material should not be used for rip-rap material.

If the S.C.S. decides to proceed with the areas that do not comply with the guidelines please notify us of this decision and when work on these areas will be started.

Seeding and mulching should be done in all areas where it was stated that seeding will be done. Seeding and mulching is standard practice on all Department of Highway projects.

Debris that is to be removed will be cut before removal if there is a chance that bank vegetation will be disturbed as a result of debris removal.

The Piney River is an unusual situation in the state where flexibility of the guidelines is needed but at the same time should be complied with.

Sincerely,

JOHN KAUFFMAN, *Research Biologist.*

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EXHIBIT 10

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
Charlottesville, Va., March 8, 1973.

Mr. WARREN FRIEND,  
Soil Conservation Service,  
P.O. Box 470, Amherst, Va.

DEAR MR. FRIEND: The Tye River project was reviewed following the criteria and guidelines as set down in Watersheds Memorandum Va.-19.

The extent of the damage in this watershed's very unusual situation does not negate the guidelines and in situations where there is more than 300 feet of excavation, sloping, or rip-rapping this necessitates critical review of the proposed work plan.

Several of the areas of the proposed plan do not comply with the guidelines for application of 216 funds. These areas are :

Area 3. The channel capacity is sufficient and the rip-rap material cannot come from the stream bed. No work should be done on re-directing the river flow.

Area 11. Channel capacity is sufficient and any rip-rap material must come from another source.

Area 13. The lower 600 feet is of sufficient capacity and the work is unnecessary.

Area 19. A is not justified unless the stream has formed a new channel.

Area 29. The funds are not intended for the purpose of flood-proofing an area.

If the S.C.S. decides to proceed with the areas that do not comply with the guidelines please notify us of this decision and when work on these areas will be started.

Seeding and mulching should be done in all areas where it was stated that seeding will be done. Seeding and mulching is standard practice on all Department of Highway projects.

Debris that is to be removed will be cut before removal if there is a chance that bank vegetation will be disturbed as a result of the removal.

The Tye River is an unusual situation in the state where flexibility of the guidelines is needed but at the same time should be complied with.

Sincerely,

JOHN KAUFFMAN,  
*Research Biologist.*

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EXHIBIT 11

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
*Charlottesville, Va., March 12, 1973.*

Mr. WARREN FRIEND,  
*Soil Conservation Service, P.O. Box 470,  
Amherst, Va.*

DEAR WARREN: The Buffalo River project was reviewed in connection with Watershed Memorandum Va-19.

There appears to be an area of conflict between the plans and section B of the memorandum which states the type and area of work to be done. Buffalo River would fall under the B2 classification and accordingly only stream channel blockage removal would be allowed. Any areas which would have bank shaping would not be eligible for work under 216 funds. Areas: 8, 9, 11, 13, 14, 15, Puppy Creek, Stonehouse Creek and Beaver Creek are sections where shaping is mentioned. We would like a clarification of this apparent conflict with the proposed project.

The individual areas were reviewed in connection with the guidelines and the following comments apply to each area:

1A The cross section above this area is 70 x 3, results of our previous work, and section F1b of the guidelines provides for the same cross section dimensions for excavated channels as in the area above and below the section to be worked.

3A The channel capacity is sufficient through the Sales property and rip-rap material for bank stabilization must come from another source according to section F3a.

3B The cross section is wider than to be expected. The cross section in the plan for areas above and below this area call for 40 x 6 and 50 x 6 respectively. This section should be 40 x 6 or 45 x 6.

3D Habitat improvement is not the intent of 216 funds.

5A This area does not agree with general provision 1 of the plan. The stream channel in this area should be maintained in its present channel, which is the result of channel dynamics. The return of the channel to pre-Agnes location is not the intent of the guidelines unless a new channel was formed and the return to the previous channel is deemed desirable.

5B The cross section varies through this section as a result of the two bridge dimensions.

5C Additional rip-rap material should be obtained for the curve below the 610 bridge and for the Puppy Creek confluence area.

6A The purpose of 216 funds is not flood protection of the crop field.

9 Riprapping should be done on critically eroding banks.

11A Critically eroding banks should be stabilized with rip-rap material and stream flow should not be relocated to protect bank.

Thrashers Creek. Stream channel should not be re-aligned. Rip-rap material should be used to protect critically eroding areas and this material should be brought in as channel capacity is sufficient.

Vegetation establishment. No mention is made of any plan to attempt to establish vegetation in areas 1 thru 7. More woody vegetation should be established in all sections of the areas to be seeded. Seeding and mulching should be done in all areas where seeding is planned. This is standard practice on all Department of Highway projects.

On all future projects we would like to have the project plan at least 1 day before the meeting. This will enable us to have our comments and questions on specific areas ready by the meeting day and in writing the day after the meeting.

Sincerely,

JOHN KAUFFMAN, *Research Biologist.*

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EXHIBIT 12

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
*Charlottesville, Va., April 9, 1973.*

Mr. KYLE SUMNER,  
*Soil Conservation Service,  
Cumberland, Va.*

DEAR MR. SUMNER: The projected plans for Buckingham County were reviewed in connection with the guidelines as set down in Watersheds Memorandum Va-19.

We concur with the projects for problem locations I, III, IV and V. These areas are well within the guidelines.

We do not agree with the proposal for problem location II as presently planned. Stream channel straightening is not the purpose of "216" funds and does not comply with the guidelines. We do agree with the removal of channel blockages to effect the return of flow to the channel existing prior to the Agnes or October flood. Creation of a new stream channel is not within the guidelines, however.

Our comments on problem location VI will be sent after we receive clarification of terms from the guideline development committee.

Sincerely,

JOHN KAUFFMAN, *Research Biologist.*

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EXHIBIT 13

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
*Charlottesville, Va., April 30, 1973.*

Mr. WAYNE HYPES,  
*Soil Conservation Service,  
Staunton, Va.*

DEAR MR. HYPES: The project plans for Augusta County were reviewed with regard to the stipulations of Watersheds Memorandum Va-19.

We concur with the rehabilitation plans for the St. Mary's River and the Calf Pasture River.

We do not concur with some limited segments of the Sawmill Run, Back Creek, Hamilton Branch and Ramsey's Draft rehabilitation proposals as presently written.

Work proposed on the 200 foot section of naturally constricted stream channel on Sawmill Run would result in a flood channel with significantly increased flow compared to the channel capacity existent prior to the floods. Increasing flood flow capacity to this degree would violate sections F1-a and F1-b of Memorandum Va.-19. Further, to accomplish the proposed widening would necessitate removing live trees which are stabilizing the stream banks. Such work would not concur with section F1-c of Va.-19.

We do not concur with the proposed work below the trailer park on Back Creek. Removal of the stable vegetated bank on the inside curve would straighten the stream channel. Such work would clearly violate sections F1-a, b, and c of the guidelines.

The proposal to remove 53 stable trees from within the Hamilton Branch channel and to excavate the deposited material would affect an increase in flood

capacity over that which existed prior to the flood. If the eroded bank opposite the trees is rip-rapped without excavation a reduction in flood capacity would result. We recommend, however, that only a minimum number of trees be removed (and excavation conducted) to balance the effect of rip-rapping on the flood capacity. Trees not selected for removal should border the minimum-flow stream course, where trees will provide much needed overhead cover and shade the stream.

Examination of the lower section of Ramsey's Draft indicates that the stream flow was not consolidated into one finite channel prior to the flooding. The proposal to so consolidate the flow within a newly dug channel would, in our opinion, be neither desirable in effect nor allowable under the guidelines. Excavating the stabilized inside curve in this section would shorten the stream channel. The proposed work would not comply with sections F1-a, b, and c of the guidelines.

Please notify me of your decision on these areas of disagreement as this will assist in our decision regarding possible appeal of these areas.

Sincerely,

JOHN KAUFFMAN, *Research Biologist.*

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EXHIBIT 14

COMMONWEALTH OF VIRGINIA,  
COMMISSION OF GAME AND INLAND FISHERIES,  
*Fredericksburg, Va., May 2, 1973.*

MR. GARLAND KIDD,  
*District Conservationist, Soil Conservation Service, USDA, P.O. Box 147, Madison, Va.*

DEAR MR. KIDD: Our appraisal of the "216" rehabilitation work plans for Swift Run in Greene County and the Rapidan River in both Madison and Orange Counties is as follows:

Obvious discrepancies exist between the formal work plans which you filed and your verbal statement of probable compliance with these plans. I would use as an example, item IV-1 of your work description for Swift Run in Green County and the Rapidan River in Madison County. This statement of work proposed reads: "Removal of vegetative debris and fallen trees that block or divert the stream and unstable trees with undermined root systems. Trees to be marked by SCS and removed to a safe point for disposal by the landowner." Marking of trees selected for removal is recommended in the rehabilitation guidelines which were incorporated into WATERSHEDS MEMORANDUM VA-19.

When asked about the lack of any visible marking on trees to be destroyed, you stated that you did not intend to comply with this stipulation on the basis of: (1) you intended to retain operative flexibility so that during actual on-site work, your staff could select those trees which would be destroyed, and (2) you did not have the time or staff to mark trees which would be cut.

We agree that under certain circumstances, slight modification of individual work plan items may be necessary. We do not agree that the "across-the-board" assumption of the degree of flexibility which you and Mr. McDowell profess, is appropriate. The effect of this position by SCS could effectually emasculate any impute by the local advisory committee.

We have encountered no difficulty in having problem trees identified and marked by SCS staff in other disaster counties.

We concur with the vast majority of work as presented to the advisory teams. In fact, of the 50 individual work locations in the 3 counties, we should like to see specific changes in only 3.

More specifically, site number 10 of the Swift Run rehabilitation proposal does not, in our opinion, require excavation. Pre-flood capacity has not been reduced by gravel deposits. The better alternative would be to stabilize the flow in its present location. The placement of rip-rap, obtained from an off-site source, may be advisable to protect the left side of the stream bank.

Site 9 and the downstream area of site 24, of the Rapidan River plan in Madison County do not require excavation and would better be served by stabilizing eroding banks as necessary with stone from an off-site source.

The work proposed for the Rapidan River in Orange County should be revised to eliminate the removal of any live, standing trees. These trees were to be cut

to facilitate the removal of flood-deposited woody debris. As discussed by the advisory team, this action is probably not warranted.

Sincerely,

NORVILLE S. PROSSER,  
Supervising Fish Biologist.

EXHIBIT 15

COMMONWEALTH OF VIRGINIA,  
Fredericksburg, Va., April 4, 1973.

Mr. RAY CORNING,  
P.O. Box 519,  
Tappahannock, Va.

DEAR RAY: Several comments seem warranted relative to our discussions of "216" projects in Nelson and Amherst Counties which were held on Monday.

Our specific disagreement with the rehabilitation plans submitted by SCS for the Buffalo, Tye and Piney Rivers (disagreements which were formalized by correspondence from John Kauffman to Warren Friend) were frequently based upon two sections of the guidelines (See SCS Memorandum VA-19). Section F-3a states that "cobblestones and similar materials utilized as rip-rap should not be obtained from stream channels unless affected sections have been *excavated* as a result of the existing emergency", and Section F-1a limits *excavation* to "localized stream reaches where gravel, rock, or sand deposits have significantly *reduced* channel capacity as compared to pre-flood capacity" or to "... return stream flow to the *pre-flood stream channel* in instances where a new channel was scoured and where the return of such flow is deemed desirable from the standpoint of environmental and other considerations".

This has given rise to interpretive difficulties between ourselves and SCS. What constitutes a stream channel? SCS personnel have assumed "channel" refers only to the water covered substrate during minimum summer flows (See A of appended drawing). Our interpretation is stream bank to stream bank (C in drawing).

SCS has implied that F-1a(2) of the guideline allows adjustment of alignment within flood channel to pre-flood channel (B in drawing) even though by our interpretation, flood capacity has not been reduced. Their interpretation would allow use of gravel deposits (D in drawing) to rip-rap eroding bank (E in drawing). We have maintained this deposit is not subject to removal, and off site rip-rap should be used to stabilize this bank. To allow removal of the deposit (even to a level slightly above minimum summer flows as planned by SCS) will allow stream flow at a level slightly over summer minimum, to spread out over much larger substrate areas.

We must appeal several specific areas of the rehabilitation plans if our interpretation of stream channel truly reflects the Guideline Development Committees'. These are: 3A, of Buffalo River plans; 3, 11, 19, of Tye River plan; and 11 of Piney River plan.

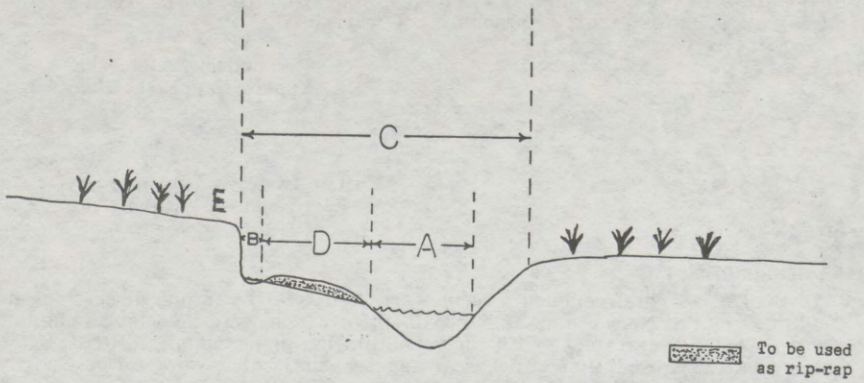
Agreement was not reached on two other sections of the rehabilitation plans. Is flood proofing a function of "216"? Watershed Memorandum 124 states "an emergency exists if a watershed is impaired by natural causes (flood) and consequently property is endangered by *erosion* because of the impairment". We have taken the position that dyking off the flood plain as per 6A of the Buffalo River plan and 29 of the Tye River plan deviates from the intent of the 124 statement regarding emergency.

Rapid clarification of the stream channel definition has been promised to Mr. Friend as bids have been requested on all work exclusive of areas of disagreements. Our appeal will then depend upon this definition and the acceptance or lack of acceptance on the part of SCS.

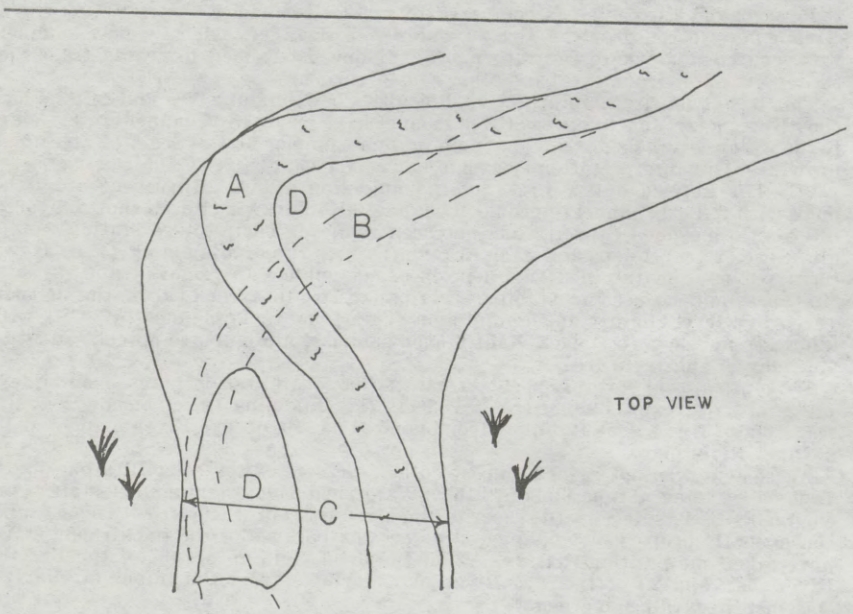
I have also enclosed a copy of their responses to John's previous correspondence.

Sincerely,

NORVILLE S. PROSSER, Supervising Fish Biologists.



SECTIONAL VIEW



TOP VIEW

MARCH 16, 1973.

## ON SITE REVIEW NOTES

(See Kaufman letter)

## PINEY RIVER

*Area 1—Bridge*

Present alignment constitutes a silt hazard as well as a hazard to highway. Proposed relocation is to conform to new bridge abutments already built. Banks will be riprapped with on-site material. Cross section will not be increased nor will length be decreased. Not a question of sufficient capacity but of siltation hazard and bank protection. There is also a hazard that the stream as presently aligned will cut a new channel across the floodplain in some future flood.

The landowner will relocate the stream anyway when he builds the new bridge fill. It is obvious that the stream will have to go under the bridge in the final analysis. A pattern of alternating pools and riffles will be created during this construction which will enhance the fisheries in the stream.

## PINEY RIVER

## SECTION 11

*Downstream portion*

Channel is too shallow and alignment constitutes a sediment hazard. Alignment should be restored to original location. Concern is both for sediment hazard and hazard of stream cutting a new channel through floodplain.

*Upstream portion*

Only material from obstruction that should be removed will be used as riprap where excavation is not otherwise required. Agreed that channel capacity is adequate here. Additional riprap over and above that obtained from required obstruction removal will be obtained elsewhere.

## TYE RIVER

*Area 3*

Riprap will be obtained from shoal above water level and hauled out in dry. No working in moving water or excavation below water.

*Area 11*

Channel to be restored to original alignment in order to correct hazard to farm land and siltation. Suggest on-site review.

*Area 13*

No work will be done within stream in lower 600 ft.

*Area 19*

Too far in rain. Did not see.

*Area 29*

Remove gravel bars which are obstructions. Dike to be used as a disposal area.

MARCH 19, 1973.

## BUFFALO RIVER

Include sloping under type of work in memo.

1-A

Cross section immediately above reach in question has been weakened by erosion during Agnes. Channel will be restored to approximate section existing downstream.

3-A

Channel is too wide and shallow. The slightest overflow will result in damage to cropland. Riprap will be obtained only where excavation is required.

3-B

Generally the cross section will be made to conform to that existing upstream and downstream.

3-D

No comment.

5-A

Channel will remain substantially in present location. Only minor changes are planned to improve alignment.

5-B

True.

5-C

We agree, this is in plan.

6-A

The idea is to protect the banks.

11-A

This is obstruction removal and realigning if necessary riprap will be hauled in.

## THRASHERS CREEK

Only minor realignment is anticipated at outlet into Buffalo River.

Seeding will be accomplished by the same methods used in 216 work following Camille which was very successful.

## NOTES OF MEETING WITH VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

A meeting of the Nelson County 216 Advisory Committee to consider exceptions of John Kauffman, Biologist with the Virginia Commission of Game and Inland Fisheries, was held on April 2, 1973 at 10:00 A.M. in the Board of Supervisors' Room in the Courthouse. The meeting was called to order by the Chairman, Benton Tinder. Present were Norville Prosser, John Kauffman, Ronald Pierce and Ed Steinkoenig, Virginia Commission of Game and Inland Fisheries; Hughes Swain, VPI Extension Service; L. F. Southard, Jr., Virginia Division of Forestry; Hunter Mawyer, Nelson County Board of Supervisors; Charles E. Stevens, Nelson County ASCS Committee; Benton Tinder, Thomas Jefferson Soil and Water Conservation District; and Joseph Vaden and Warren Friend, Soil Conservation Service.

Mr. Tinder turned the meeting over to Mr. Friend who explained the purpose which was to consider exceptions taken by Mr. Kauffman to the proposed rehabilitation plan for Tye and Piney Rivers. Mr. Friend indicated that after receiving the exceptions he and the State Conservation Engineer and Biologist had reviewed these exceptions on the site.

Copies of Mr. Kauffman's letters and remarks of the Soil Conservation Service Engineer and Biologist were passed out to those present. Mr. Kauffman's exceptions on Piney River were reviewed section by section. There was considerable discussion on many points which seem to deal with policy and engineering as opposed to fish and aquatic life. *When it was suggested that this proposed plan could improve fish habitat while at the same time achieve the objectives of the 216 money, Mr. Prosser indicated that he would oppose any habitat improvement with use of 216 funds.*

Two questions asked by Mr. Southard seemd to be pertinent and timely were :

1. If work is done as outlined in present plan, will it damage present fish habitat, if not is it only a question of policy?

2. From an ecological standpoint would there be an adverse effect by working in the three areas where exceptions have been raised?

Neither of these questions were answered by the Biologist.

Mr. Swain attempted to establish a basis for the exceptions raised. After a rather lengthy discussion it appeared that these exceptions were based on the interpretation of an adequate cross-section and SCS policy with regard to use of 216 funds. Mr. Swain asked whether or not they were engineers and the answer was negative. He also asked if they were competent to interpret SCS policy and received no answer.

Much emphasis was placed on semantics: whether or not there was an "imminent hazard"; what was meant by "channel"; what did SCS mean by "rip-rap"; and what constituted a blockage.

Mr. Kauffman reading from his letter noted that SCS has not provided for mulching following seeding, and pointed out that the Highway Department did this and we should do the same. Mr. Vaden responded by pointing out the success of seeding done after Camille and stressing a feeling of competence in this area.

Little progress was made in discussion and it seemed that all exceptions on both rivers should be noted, and that discussion which continued to be general be applied to all areas in question.

Mr. Friend asked if fish habitat could be improved at no additional cost would it be acceptable to the Biologist. The question was never really answered, except that Mr. Kauffman indicated that the Flood Control Act of 1950 did not provide for fish habitat. Mr. Prosser continued by asking whether or not work would be of long or short term benefit.

The major opposition seemed to come at the point of whether or not cross-sections were adequate and point of using stream material for rip-rap. Mr. Prosser did state that by-in-large he felt the plans were very good. They were opposed to only 17% of Tye River, and 22% of Piney River.

Since the discussion seemed to have reached a point of pointlessness, the Chairman proposed to adjourn. However, before adjournment, the Chairman requested comments from non-technical members.

Mr. Mawyer indicated that he felt work was needed and that rip-rap was necessary in the overall work to be done. Mr. Stevens also commented that work should begin as soon as possible. Landowners, he said, had lost two crops within three years and if work was not begun right away, may lose their crops this year. Mr. Tinder echoed the sentiments of these members and suggested that a good deal of time had been involved in these rather unproductive meetings. Mr. Vaden summed it up by saying that he hoped that we could cooperate together in using our knowledge to benefit the people.

The meeting was adjourned at 12:00 noon.

WARREN G. FRIEND.

Senator DOMENICI. Mr. Johnson, I wonder because of time constraints, do you have some prepared remarks or letters that we might use?

#### STATEMENT OF FRED JOHNSON, WATER RESOURCES COORDINATOR, PENNSYLVANIA FISH COMMISSION

Mr. JOHNSON. Yes, sir, I do. I have a document here which is hot off the press of a recently completed study with the use of ARC funds which I would like to submit. I have a map here which may be of some help, which will show the location of channelized streams of Pennsylvania.

Senator DOMENICI. They will be made a part of the committee file.

Mr. JOHNSON. My statement will be brief. Mr. Chairman, I have no illusions that channelization will soon be completely eliminated as a flood control measure. However, I do hope that we may soon place

much greater controls on the extent of work performed under the label of emergency.

This recently completed study substantiates those done by Arthur D. Little, the Reuss committee, and at least six States outlining the tremendous ecological damage and questioning its effectiveness.

Quoting from the reference report, after noting that channelization is ineffective in protecting against major floods, they noted that the flood level was decreased by only about 6 inches. The following statements are made:

Much of the channelization performed following Hurricane Agnes was unnecessary, involving channel modification beyond the required clearing of debris and wreckage. In addition, stream channelization is often improperly performed, failing to afford the desired level of flood protection and necessitating rechannelization in future years.

Because channelization was observed in areas where no entity in need of flood protection was apparent, it was concluded that channelization was sometimes undertaken without the establishment of an absolute need for protection.

The six streams studied, Mr. Chairman, in Pennsylvania, included three streams—Monsee Creek, Fishy Creek, and Beaver Creek—all trout streams, sections of which were channelized without any entity apparent to be protected.

Mr. BARLOW. Excuse me, Mr. Johnson. Thank you very much for the extra time you have given us.

Senator DOMENICI. You are most welcome. What page were you reading from?

Mr. JOHNSON. That was page 192.

Senator DOMENICI. We thank you all very much.

Mr. CORNING, I really think we could learn much from the communications you have there. If you don't want to make them part of the record at this point, we would be delighted to receive it later, so if you want to fix them up in the form that is acceptable to your agency, we will receive them later.

Mr. CORNING. Thank you very much.

[Mr. Johnson's statement with attachments, and Mr. Barlow's statement together with a subsequent letter addressed to Senator Domenici, follow:]

STATEMENT OF FRED JOHNSON, WATER RESOURCES COORDINATOR, PENNSYLVANIA FISH COMMISSION

The Pennsylvania Fish Commission views with grave concern any change to Section 216 of the Flood Control Act which would increase the scope and extent of work which the Soil Conservation Service would be permitted to accomplish in or on the banks of the streams of the Commonwealth. We are all too aware of the results of stream "restoration" work done following the 1972 flood (Agnes).

An estimated 500 miles of our streams were channelized following this natural disaster. Most of these were trout streams and all were degraded ecologically, aesthetically and recreationally. Our concern over this degradation leads us to obtain Appalachian Regional Commission funding for a study titled, "Evaluation of the Environmental Impact to Appalachian Pennsylvania of the 1973 Flood and Subsequent Stream Channelization with Future Policy Recommendations" (Inclosure 1). The results of this study confirm and reinforce those done by others, including the Arthur D. Little "Report on Channel Modifications," the Hon. Henry Reuss chaired "Report of the House Committee on Government Operations, Stream Channelizations," symposiums, and studies in Montana, Idaho, North Carolina, Georgia and Missouri.

Several pages from this 300 page report are submitted for consideration. Pages XII to XV from the Executive Summary point out that channelization is ineffective in providing protection for major floods. It also observes that "much of the channelization performed following Hurricane Agnes was unnecessary . . ." It was noted (page 165) that average cost per mile of channelization (1974 dollars) was \$28,150. Another \$30,000 per year of recreational opportunities (fishing) is foregone, based upon the *Southeastern Economic Survey of Wildlife Recreation* (Georgia State University, 1974), and usage figures obtained from the 1974 State Outdoor Recreation Inventory. These costs and annual losses far exceed the potential flood savings in many areas.

Paradoxically, it is calculated that stream levels are reduced by only 6 inches (.5 foot) on major floods at the channelization location (page 164) (and are known to *increase* downstream of extensive channelization.)

Although nearly every channelized stream in Pennsylvania viewed by this witness contained sections where an entity to be protected could not be found a list of some typical streams is offered. All contain channelized reaches for which no entity apparently could have been protected:

- Aspah and Straight Runs—Tioga County
- Bowman Creek and Roaring Run—Wyoming County
- Fishing Creek—Columbia County
- Larry's, Lycoming and Little Pine Creeks—Lycoming County
- Marsh Creek—Centre County
- Frankstown Branch, Juniata River—Blair County

In the study recommendation it is observed that in fact rarely does an emergency exist after a flood in terms of channel clearing and suggests that more planning should take place before such work is undertaken (page 194).

Where stream clearance is justified, Pennsylvania has adopted a set of guidelines (Inclosure 2), to curtail the extent of unnecessary work and limit permanent damage to the stream.

These recommendations would appear to suggest that less, not more money, is needed for emergency stream work immediately following flooding conditions. An optimistic note is sounded on page 189 that the "need for channelization will decrease in future years due to building controls in flood prone areas." Hopefully, the Water Resources Subcommittee will concur with this observation.

#### INCLOSURE 1

Excerpts from "Evaluation of the Environmental Impact to Appalachian Pennsylvania Waters of the 1972 Flood and Subsequent Stream Channelization with Future Policy Recommendations."

Prepared for Pennsylvania Fish Commission and Department of Environmental Resources, Commonwealth of Pennsylvania, and Appalachian Regional Commission, Washington, D.C.

Dated: September, 1975.

#### EXECUTIVE SUMMARY

During June of 1972 Tropical Storm Agnes moved in an erratic pattern through the State of Pennsylvania. Total precipitation received during the 5-day storm period ranged from four to 18 inches, with the east-central part of the State receiving the greatest rainfall. This extremely heavy rainfall resulted in widespread flooding, land subsidence and other damages.

The floods resulting from Agnes were perhaps the worst natural disaster ever to hit the State of Pennsylvania, with fifty persons known dead and damages estimated to be between \$1.5 and \$2.0 billion. In the aftermath of the flooding the entire State was declared a disaster area by President Nixon.

One of the activities which followed Tropical Storm Agnes was channel modification, or channelization of streams. Such activity was undertaken by several agencies, under emergency powers, to clear stream channels of obstructions and otherwise facilitate the movement of water.

The intent of this investigation is to examine the environmental effect of Hurricane Agnes flooding and subsequent restoration procedures on a selected cross section of Pennsylvania streams. The primary focus of the study is on the ecological changes brought about by Agnes flooding and the various types of stream alterations implemented both before and after the flood. This report is intended then, to be used as a decision making tool for use in, or to prevent, future emergency situations.

The approach taken was one of multidiscipline study of selected streams which had been subjected to channel overflow and modification in order to assess the effects of channel modifications as well as flooding.

A geologic investigation was undertaken to determine the hydrology and morphology of the subject streams and their drainage basins. This phase of the study included detailed examination of streambeds and bank material; stream flow and discharge; drainage basin bedrock and soils; and general stream conditions before, during and after Hurricane Agnes. Both extensive literature review and field study were performed to obtain these data.

An engineering study of the selected streams was performed to determine the hydraulic and related characteristics of the stream channels and flood plains. Based upon existing information and a field investigation, flood frequency, stream flows, approximate flood elevations and velocities, and flood damages were determined. These were then related to the cost of and protection afforded by channel modifications.

The central focus of the project was an intensive ecological investigation, including examination of water quality, habitat structure and biological populations. Investigation and analysis of aquatic biota and associated habitats were performed at channelized and natural sites on each of six selected streams. Included in the study of aquatic biota were: (1) qualitative examination of aufwuchs, or attached algae; (2) quantitative and qualitative study of bottom-dwelling macroinvertebrates, including computation of a diversity index; and (3) investigation of the population density and standing crop of both game and non-game species of fish. Of primary concern were the populations of gamefish, particularly trout.

Based upon the data gathered the following findings and conclusions are reached.

1. In general, the observed channel modifications provide protection from floods having up to a 10- to 20-year frequency. Excepting that on Mill Creek, the flooding experienced on the subject streams during Tropical Storm Agnes was of much higher magnitude. The observed stream channelization was found therefore to be ineffective in providing protection from flooding of the magnitude brought about by Agnes.

2. Much of the channelization performed following Hurricane Agnes was unnecessary, involving channel modification beyond the required clearing of debris and wreckage. In addition, stream channelization was often improperly performed, failing to afford the desired level of flood protection and necessitating rechannelization in future years.

3. Because channelization was observed in areas where no entity in need of flood protection was apparent, it was concluded that channelization was sometimes undertaken without the establishment of an absolute need for protection.

4. No residual effects of channelization on stream water quality were found.

5. It was found that natural stream reaches held more trout than channelized stream reaches. Trout residing in channelized areas were predominantly of the fingerling size class. Thus, while trout populations were found in some channelized areas, they were comprised mainly of sub-legal individuals and therefore cannot be considered a sport fishery.

6. Channel modification appears to have no long-term deleterious effects on forage fish species, attached algae or benthic macroinvertebrates. Thus, it can be concluded that reduced trout populations in channelized stream reaches are not the result of disruption of a lower trophic level. It appears rather, than channel modification has a deleterious impact on trout populations through the destruction of physical habitat. The removal of overhead cover in the form of undercut banks, low overhanging bank vegetation, and submerged logs and boulders, and the elimination of deeper water pockets and pools, results, in a severe reduction in the habitat available for trout. Although channelized stream reaches may provide suitable habitat for fingerling trout, they fail to provide sufficient habitat space for larger individuals.

7. The trout losses due to channelization were most severe in the limestone streams (Clover and Fishing Creeks), which support the largest natural trout populations. Streams having large boulders in their channels appear to be the least affected by stream channelization. These boulders are difficult to remove from the channel, and often remain as cover for trout, providing there is sufficient water depth.

8. The reduced fishing activity brought about by sport fishery losses resulting from post-Agnes stream channelization represents to a potential yearly loss of

over \$5 million to the Pennsylvania economy. The absolute loss is difficult to compute, since it is not known what percentage of the fishing activity is transferred to the remaining natural stream reaches.

The findings of this investigation indicate a lack of planning prior to the performance of stream channelization, as well as a failure to consider the adverse impacts resulting from channel modifications. The examination of channelization on Pennsylvania streams has shown that, many times, the alterations instituted at a particular site are either insufficient or excessive. For these reasons a comprehensive planning process is needed, in which the most advantageous type of channel modification at a given site is determined, and the possible impacts are examined.

There are several procedures which should be followed in such a planning process. Following the establishment of a need for flood protection, the extent of protection required must be determined. This is a critical phase of the planning process, since it then enables determination of the types and extent of channel modification required to affect that level of protection.

In addition, the stream course and adjacent topography should be examined so that alternate channel modifications compatible with existing physical conditions may be selected. Data concerning fisheries resources and recreational use of the stream reach to be channelized should be gathered.

The various selected alternative channel modification measures may then be evaluated. Such an evaluation should include, but not necessarily be limited to the following criteria:

- cost
- effectiveness
- maintenance requirements
- potential damages to the aquatic system
- recreational opportunities
- aesthetics.

Should it be decided that channel modification is justified, preference should be given to alterations outside of the established banks whenever they are feasible. Construction of elevated flood plains, levees and diversion channels, when done properly, will result in less damage to the natural streambed and banks than will work performed within the channel itself. When within channel modifications are the only feasible alternative, habitat improvement devices should be installed following channelization.

Channelization should be performed in such a manner as to cause minimal damage to the natural environment. The Susquehanna River Basin Commission, with the cooperation of other agencies, has developed comprehensive guidelines for the performance of stream clearance and restoration work. These guidelines are aimed at minimizing damage to the stream and surrounding land; and it is recommended that they be followed during the performance of such work.

Even when channelization is undertaken in a sound manner, it may still present a problem in later years. That problem lies in maintenance of the channel alterations; that is, the periodic rechannelization of stream reaches. Such activity should be carefully regulated and kept to a minimum. No maintenance of previously channelized stream reaches should be undertaken unless conditions are such that there is a very real threat of property damage during high water stages. When such work is undertaken, only the minimum restoration of the stream channel to insure the flood protection required should be performed.

As a final suggestion, it is strongly recommended that post-flood stream restoration procedures be limited to clearing the channel of debris and wreckage, and gravel deposits where they cause significant reductions of the channel volume. The occurrence of a major flood event should not be used as justification for more extensive channel alterations.

It was further observed that, in some instances, it is not readily apparent from observation what entity was to be protected by alteration of the stream channel. Although most of the channelized stream reaches observed were located along highways or near bridges, dwellings or crop fields, some channelized reaches were bordered by fallow fields or wooded lands. In such cases it was difficult, if not impossible, to determine the actual purpose of the channelization. The occurrence of such channelization works points to the fact that, in some cases, an absolute need for channelization is not established before stream alteration is undertaken.

As an additional note, the emergency stream restoration work performed following Hurricane Agnes warrants some discussion. The purpose of such restoration work is to restore the channel to its pre-flood state so that, should

another period of heavy rainfall soon occur, a sufficient waterway exists to carry the increased runoff. This can be accomplished by clearing the channel of debris and wreckage, and in some instance, gravel or rock deposits left by the receding floodwaters. Work of this nature inflicts little damage on the habitat of aquatic biota if done properly. Such was the case on Beaver Creek where the lower three miles of the stream were cleared following the Agnes flood.

In many instances, however, it seems that the emergency situation was used as an opportunity to perform comprehensive stream channelization projects. This conclusion was also reached by the Susquehanna River Basin Commission (1973) in their review of emergency stream restorations performed in the wake of Tropical Storm Agnes. The report reads in part:

"It has been observed that frequently the corrective efforts include unnecessary and unauthorized channelization, straightening of meanders and physical alteration of natural streambed features, destruction of vegetation along stream banks and deposition of debris within areas subject to future flooding."

The fact that such work is unnecessary and frequently ineffective reflects the difficulty in controlling stream channelization activities.

#### *Effectiveness*

Several generalizations can be made concerning the channelization examined on the six subject streams. In evaluating the protection afforded by the channel modifications investigated, it is evident that channelization performed prior to Hurricane Agnes did little to ameliorate the flooding. The majority of the channelized sites studied provide sufficient channel volume to contain the 10- or 20-year flood. Furthermore, streamflow calculations indicated that flood elevations in stream reaches channelized after Agnes would be only 0.5 feet lower than those actually experienced, should a storm of similar magnitude occur. It must be recognized, however, that the Agnes event was an unusual and large flood; and no stream channelization, save rather impractical and cost-prohibited alterations, would be effective under those conditions.

Reaches of channel modification observed on the subject streams are generally short, covering stream distances of 0.25 miles or less. For this reason bank overflow is controlled only on a localized basis, along the channelized reach and for a short distance upstream due to the alleviation of backup.

The various types of channel modifications vary with respect to their effective lifespans. Vegetation stripped from the banks becomes reestablished in five years or less. Gravel bars also reappear, usually after each major flood. Channel widening and channel relocation have a longer lifespan, up to 20 years or more. These modifications require proper riprapping, however, if they are to last for any length of time. A relocated channel, unprotected by riprap, can be eroded in six months or less.

Elevated floodplains and levees are probably the longest lasting alterations applicable to Pennsylvania streams. Levees require proper design and riprap, however, to avoid erosion during high water stages.

Maintenance activities can extend the effective lifespan of channelization considerably. Such maintenance is often required on a periodic basis for channel modifications to remain effective. For instance removal of bank vegetation is required approximately every five years. Also, gravel bars normally become reestablished and require removal. In addition, modifications such as widening or relocation of a channel often create imbalanced conditions, necessitating unplanned maintenance work. This was brought to light by the observance of several stream reaches which have been modified repeatedly over a period of years.

A particularly striking example is the section of Fishing Creek where site 3a was located. Fishing Creek was channelized in this area during the late 1940's, and most recently channelized following Hurricane Agnes. A farmer living adjacent to the stream at that site disclosed that the reach had been dredged several times in the interim. Muncy Creek also contains several stream reaches that have been altered a number of times during the past forty years, notably projects performed under the WPA program. Channel modifications performed at that time increased the tendency of Muncy Creek to meander. Many of the modifications were soon washed out, creating gravel and silt deposits, and further protective measures were required in the following years.

#### *Costs*

A comprehensive economic cost/benefit analysis would be inappropriate here, since this study dealt with relatively short reaches of stream channelization located in undeveloped areas. Flooding in these areas results mainly in damages

having an inconvenience value (e.g. road inundation, basement flooding) rather than a dollar value. For this reason a cost/benefit analysis would be at best tentative, and most likely misleading.

It is possible, however, to obtain reasonably definitive costs associated with channel modifications from Pennsylvania Department of Environmental Resources records. A listing of all recorded channelization projects and their costs is given in Appendix F. Based on these data the average field costs (in 1974 dollars) of channelization projects on Muncy, Fishing and Mill Creeks were \$8,305, \$13,320 and \$13,585, respectively. These values represent costs per mile of \$18,270, \$22,700 and \$43,470. *The average cost per mile of channelization on the three stream collectively is \$28,150.*

Although it is not possible to give the costs associated with each type of channel alteration (i.e. clearing, widening, etc.), some generalizations can be made. The least costly type of alteration is general channel clearing and bank vegetation removal. Although less costly than other alterations, these modifications must be repeated more frequently, and therefore, may have a higher long-term cost. Other channel modifications within the established banks, such as dredging or widening have a somewhat higher cost; and in fact, can become quite costly due to the high rates charged by contractors for the use of earth moving equipment.

Alterations performed outside the established banks (i.e. levees, elevated floodplains) are normally less expensive than other modifications requiring the use of heavy equipment, since earth moving machinery can be operated more efficiently outside of the channel. That is, a given amount of earth can be moved more quickly, and therefore at a lower cost. The cost of levee construction can vary considerably depending upon the availability of borrow. Elevated floodplains are perhaps the most economical form of channel modification in that a large amount of additional channel volume can be provided at a relatively low cost. Elevated floodplains present an additional cost advantage, since they have very minimal maintenance requirements.

It is expected that the need for channelization will decrease in future years due to building controls in flood prone areas. Low cost flood insurance is now available to communities and townships under the National Flood Insurance Program administered by the U.S. Department of Housing and Urban Development (HUD). To be eligible for this federally subsidized flood insurance, communities must formulate zoning ordinances and building codes. These ordinances must restrict development of land within the 100-year floodway. In addition structures built outside the 100-year floodway, but still in flood prone areas, must have certain flood protection measures included in their construction. These regulations are expected to bring about a reduction in floodplain development, thereby reducing the need for new channelization of waterways. Periodic re-channelization in areas of existing development will continue, however.

Although the social impacts of stream channelization are somewhat difficult to define, there is a major economic impact for which reasonably accurate figures are available. This is the economic loss incurred by reduced fishing activity. If it is assumed that a stream reach which is channelized no longer supports legal sized trout (and the data gathered in this study indicate that this is the case), then it follows that the stream reach is lost as a sport fishery. The Pennsylvania Fish Commission uses a monetary value of \$35.00 for a day of fishing. This value is based upon the mean figures computed by Horvath (1974) for southeastern states. Using the data shown in Table 29 for the six subject streams, an annual average of 806 fisherman-days per mile of stream is obtained. This number is somewhat high if applied on a State-wide basis, since the six streams investigated are high quality trout waters and receive more season-long fishing pressure than most streams. Surveys performed by the Pennsylvania Fish Commission indicate that an annual average of 500 fisherman-days per mile of stream is a more realistic State-wide average (F. Johnson, personal communication).

Based on a survey performed by the Waterways Patrolmen in each county of the State, it is estimated that 300 stream miles were channelized in the State of Pennsylvania following the Agnes floods. This and other information concerning extreme channelization following Hurricane Agnes are contained within the 1972 Flood Damage Assessment Report prepared by the Pennsylvania Fish Commission (1974). Using an average of 500 fisherman-days per mile at a cost of \$35-day, this represents a potential loss of 5.25 million dollars annually to the economy of the State of Pennsylvania.

## CONCLUSIONS

Based upon the data gathered during this investigation the following conclusions can be drawn.

1. Stream channelization, as observed on the six streams investigated, is ineffective in providing protection from flooding of the magnitude occurring during Tropical Storm Agnes. In general, the observed channel modifications provide protection from floods having up to a 10- to 20-year frequency.

2. Much of the channelization performed following Hurricane Agnes was unnecessary, involving channel modification beyond the required clearing of debris and wreckage. In addition, stream channelization is often improperly performed, failing to afford the desired level of flood protection and necessitating rechannelization in future years.

3. Because channelization was observed in areas where no entity in need of flood protection was apparent, it was concluded that channelization was sometimes undertaken without the establishment of an absolute need for protection.

4. There appear to be no residual effects of stream channelization on water quality of the six streams investigated.

5. Channel modification appears to have no long-term deleterious effects on forage fish species, attached algae or benthic macroinvertebrates. Thus, it can be concluded that reduced trout populations in channelized stream reaches are not the result of disruption of a lower trophic level.

6. Stream channelization has a direct, deleterious impact on trout populations. Modification of stream channels removes the physical elements comprising good habitat for trout, particularly larger trout. Most serious are the removal of overhead cover and the elimination of deeper water pockets and pools.

7. The trout losses due to channelization were most severe in the limestone streams (Clover and Fishing Creeks), which support the largest natural trout populations. Streams having large boulders in their channels appear to be the least affected by stream channelization. These boulders are difficult to remove from the channel, and often remain as cover for trout, providing there is sufficient water depth.

## RECOMMENDATIONS

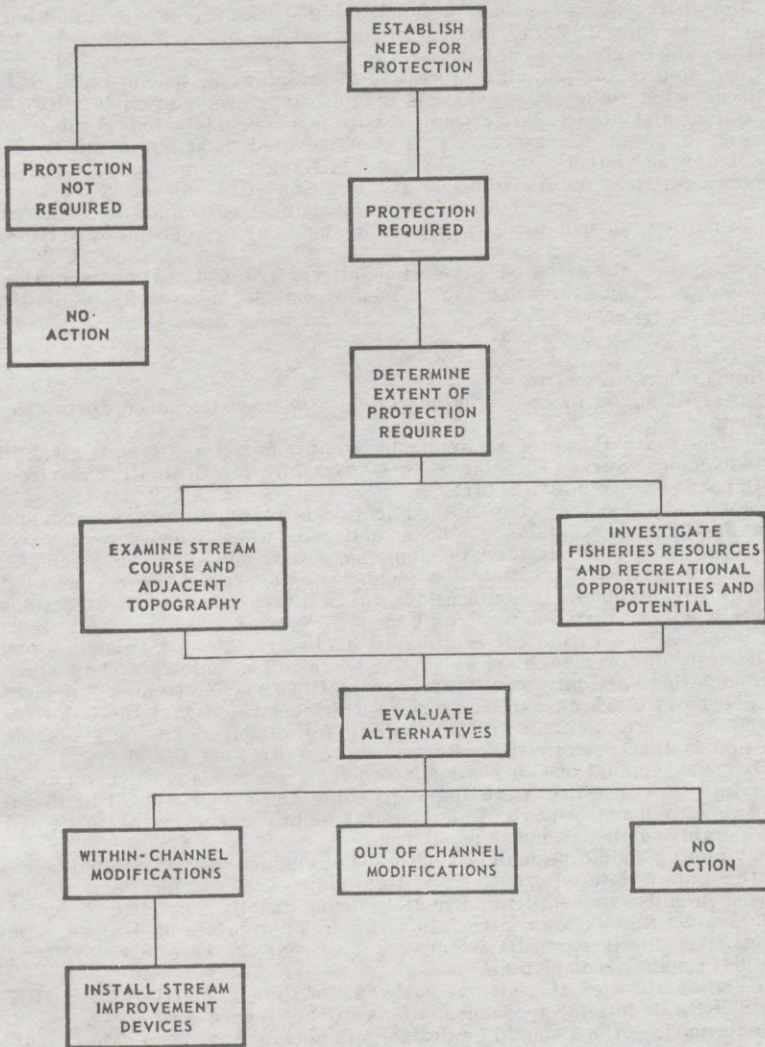
One of the most important findings of this study is that there is a definite lack of control of channel modification activity. It has been observed that a great deal of unauthorized stream modification takes place in Pennsylvania. In many instances these modifications are carried out by individuals who mean well but do not know the level of flood protection provided and the associated environmental damages which result. This lack of control often results in excessive disruption of the stream and associated biota with an ineffective reduction of future flood damages.

It is in fact rare that an emergency exists in terms of stream channel clearing following a flood. There is a tendency for individuals to overreact to the flood situation and to feel the channel must be cleared and opened up to prevent a repeat occurrence. But the fact remains that there is a very low probability of imminent danger of a recurring flood event of any sizable proportion immediately following the first event. Thus there is more an imagined emergency than a real emergency. Channel modifications under the "emergency" are often undertaken without adequate foresight and supervision.

The basic solution to this problem is to develop an adequate understanding of the magnitude of the flood hazard and to prepare a reasoned plan of action which can be developed to overcome that hazard. A fully effective project requires sound planning, engineering and supervision.

This is a reasoned, methodical process that may take some time. Whatever the project, it should be undertaken with a full knowledge and understanding of the relative advantages and disadvantages, costs and benefits, trade-offs and alternatives. A conceptual, coordinated, comprehensive planning process is proposed here to develop the most advantageous type of channel modification needed. This process is outlined in Figure 74.

Figure 74. Planning process for stream modification projects



The first step in such a planning process is, of course, to establish the need for flood protection. A need for protection is usually identified at the local level, most vocally by those individuals and communities directly affected by flood waters, usually immediately following an event. Flood hazard mapping and flood insurance study programs of the U.S. Department of Housing and Urban Development, and flood plain management reports from the Corps of Engineers can often be useful in determining the need for protection.

Following the establishment of a need for flood protection, the extent of protection required should be determined. This can be accomplished using engineering analysis to compute the expected frequency of streamflows and flood elevations. In this manner the increased channel volume or hydraulic efficiency needed to effect the desired level of flood protection can be determined.

Determination of the level of flood protection needed is an important step in the planning process, since it then enables determination of the types and extent of channel modification required to effect that level of protection. Based on the protection needed, alternative measures can be selected for further evaluation. Alternatives to be considered should include channel modifications both within (i.e. clearing, dredging, widening) and outside of (i.e. levees, elevated flood plains) the established banks.

The third step in the planning process is to examine the stream reach to be channelized to determine which channel modifications are compatible with the stream course and adjacent topography. This is particularly important when considering out-of-bank measures. The use of elevated flood plains and levees is restricted somewhat by topography; and diversion channels are practical only where meanders occur. Additionally, data concerning fisheries resources and recreational use of the stream reach to be channelized should be gathered. This information can usually be supplied by the local or regional waterways Patrolman.

Based upon the data gathered, the various alternative modifications may then be evaluated. Such an evaluation should include, but not necessarily be limited to, the following criteria:

- cost
- effectiveness
- maintenance requirements
- potential damages to the aquatic system lost recreational opportunities
- aesthetics

An excellent evaluation process, applicable to any impact analysis, is given in the U.S. Geological Survey Circular 645, "A Procedure for Evaluating Environmental Impact" (Leopold, *et al.*, 1971).

Should it be decided that channel modification is justified, preference should be given to alterations outside of the established banks, whenever they are feasible. Construction of elevated flood plains, levees and diversion channels, when done properly, will result in less damage to the natural streambed and banks than within channel modifications. Also, these types of modifications have lower long-term maintenance requirements.

When modifications within the established banks are the only feasible alternative, habitat improvement devices should be installed following channelization. Although there are only a few studies evaluating the effectiveness of devices such as deflectors or check dams, it has been demonstrated that these devices can contribute to creation of a suitable habitat for gamefish. The most notable investigation is that performed by Barton, *et al.* (1971) on the Weber River, Idaho. Gamefish populations in channelized stream reaches in which improvement devices were installed were found to equal those in natural, unaltered areas. Channelized reaches where no habitat improvements were instituted held considerably smaller gamefish populations.

Proper planning should be matched with sound engineering. After final selection of the appropriate alternative, written plans and specifications should be prepared in sufficient detail to adequately define exactly what is to be done. Those plans must then be translated into action by appropriate field supervision of the activity. This is particularly important so that the carefully developed plans can be brought to completion.

For the actual site work there is one basic rule of thumb: MINIMIZE WORK IN THE STREAM. Specific recommendations in this regard are:

1. Channel modifications should be designed in such a way as to avoid creating additional problems upstream or downstream of the actual site of modification (i.e. backflow, erosion). Riprap should be installed where needed.
2. All denuded areas should be mulched and seeded as soon as possible.
3. To avoid excessive streambed damage, where in-stream work is required, rubber-tired vehicles should be employed. Materials moved from one side of a stream to the other should be carried rather than pushed across the stream; and stream crossings should be kept to a minimum.
4. Whenever possible, and unless dredging is a planned part of the operation, streambed materials should not be used for levee construction or riprap.
5. When out of bank modifications such as elevated flood plains or levees are constructed, disturbance of low bank vegetation should be avoided, especially that growing out over the water surface.
6. The stream gradient should not be altered to the extent that sheeting, or uniform flow of minimal depth, is created.

The Susquehanna River Basin Commission, with the cooperation of other agencies, has developed comprehensive guidelines for the performance of stream clearance and restoration work. These guidelines are aimed at minimizing damage to the stream and surrounding land; and it is recommended that they be followed during the performance of such work.

Even when channelization is undertaken in a sound manner, it may still present a problem in later years. That problem lies in maintenance of the channel alterations. That is, the periodic rechannelization of stream reaches. Such activity should be carefully regulated and kept to a minimum. No maintenance of previously channelized stream reaches should be undertaken unless conditions are such that there is a very real threat of property damage during high water stages. When such work is undertaken, only the minimum restoration of the stream channel to insure the flood protection required should be performed.

It is further recommended that post-flood restoration procedures be confined to clearing the channel of debris and wreckage, and gravel deposits where they cause a significant reduction of the channel volume. The purpose of emergency action is to restore a channel to its pre-flood condition, so that the channel can contain high flows brought about by additional rainfall received soon after flooding has occurred. Emergency conditions should not be considered as justification for extensive channel alterations. Modifications beyond clearing of debris and wreckage from the channel should be preceded by the planning and evaluation process previously described. In addition, the Pennsylvania Fish Commission should be advised prior to the performance of emergency channel restoration, so that qualified personnel can be on hand to insure minimal stream damage.

It should be kept in mind that these recommendations apply to all streams whether they currently support a productive sport fishery or not. It could be rationalized that, in streams that are presently contaminated with mine drainage or industrial or municipal discharges and therefore do not hold gamefish populations, there is no need to avoid damaging physical habitat elements. In view of the Federal and State water quality management programs currently underway, such thinking is unsound. Steady gains are being made in eliminating the discharge of pollutants into Pennsylvania's waterways, and each year additional stream mileage recovers from the effects of water pollution as the result of pollution control programs. Under careful stocking and management by the Pennsylvania Fish Commission, many of these waters are being reclaimed as a sport-fishing resource.

#### INCLOSURE 2

These are guidelines prepared by the Pennsylvania Department of Environmental Resources, Bureau of Water Quality Management, for future Emergency Stream Clearance and Restoration Work. The Soil Conservation Service (SCS) is not required to comply with them. SCS compliance is purely discretionary.

DEPARTMENT OF ENVIRONMENTAL RESOURCES—BUREAU OF WATER QUALITY MANAGEMENT—PENNSYLVANIA PROGRAM OF EMERGENCY STREAM CLEARANCE AND RESTORATION WORK—SEPTEMBER 30, 1975

#### A. Objectives

The objective of the emergency stream clearance and restoration permits issued by DER in the wake of Tropical Storm Eloise is to:

- 1) Restore the stream to its free flowing condition and to its original character prior to the storm.
- 2) Eliminate hazards to life or property caused by changed conditions.
- 3) To do the work with minimum harm to stream ecology.

#### B. Criteria

1) The landowner or the municipality must obtain the necessary permit for the clearance work and indicate an understanding of these guidelines before work is started.

2) When and where possible all heavy equipment must be kept out of the stream during the conduct of the work.

3) Materials such as logs, stumps and other large and heavy pieces of debris must be winched or lifted out of the stream when possible.

4) Unless there is a considerable amount of debris such as trees, extensive silt bars and landslides, the stream must be left alone. If trees have fallen into or across the stream they can be cut and removed but only those that have fallen

into or across the streams. Obstructions that would have an appreciable effect on flood flows should be removed. Trees and other debris that could ultimately wash downstream should also be removed.

5) Generally only debris restricting the flow of the stream may be removed; however, the DER field representative will exercise individual discretion relative to removal of additional material.

6) Channelization is not authorized unless specifically provided in the permit.

7) Spoil piles must be established away from the stream above high water elevation. All possible precautions must be taken to minimize damage to trees, shrubs and ground cover along the stream bank in the work area and in developing access ways.

8) Access ways and storage areas must be restored by the contractor upon completion of the job. Immediate stream bank areas in the work area must be reseeded or replanted promptly.

9) Burning of any debris removed from the stream should only be done with the approval of DER Regional Air Pollution Control Engineer.

10) There should be absolutely no widening of the original stream channel. Original stream channels that have widened during the flood, and become more shallow, can be deepened to their original condition or an elevated flood plain established for that section.

11) Stream gradients may not be made uniform nor shall channels be widened unless specific authority has been given.

12) Restoration in areas where flood hazard potential is minimal will receive low priority for action.

### *C. Procedures*

1) You must obtain a written permit from the DER Regional Office.

2) Your application must show a sketch (plan) of the section of stream to be worked on.

The sketch must show :

The name of the stream.

Location of work.

Nearby Township or Legislative routes.

Beginning and end of work.

Type of work to be done in each area of stream.

The way the stream will look after completion of work.

North Arrow.

Name of person preparing sketch.

3) Your application must show a written description of the work including :

a) Steps to be taken to meet the above objectives and criteria,

b) Type of equipment to be used,

c) Work procedures and methods,

d) Land restoration methods,

e) Erosion and sediment control methods,

f) Total estimated time for completion of job.

4) Applicant must notify DER contact in Regional Office at least two days before start of work.

5) Applicant must arrange for field conference between Contractor and DER Representative and/or Waterways Patrolman before start of work.

6) DER Representative may stop work if not in compliance with permit or other DER requirements.

7) These objectives, criteria and procedures are part of the permit. Violations of them will be considered violations of the permit.

### *Emergency stream clearance coordinators*

State :

Vaden R. Butler, State Coordinator,  
Bureau of Water Quality Management,  
Division of Dams & Encroachments,  
P.O. Box 2063,  
Harrisburg, Pennsylvania 17120  
(Phone 717-787-6826)

Edward R. Brezina, Deputy Coordinator,  
Bureau of Water Quality Management,  
Aquatic Biology Section,  
P.O. Box 2063,  
Harrisburg, Pennsylvania 17120  
(Phone 717-787-9614)

Counties : Bradford, Lackawanna, Luzerne, Monroe, Pike, Sullivan, Susquehanna, Tioga, Wayne, and Wyoming.

Edward Kupsky, Aquatic Biologist,  
Bureau of Water Quality Management,  
90 East Union Street,  
P.O. Box 659,  
Wilkes-Barre, Pennsylvania 18703  
(Phone 717-825-751)

Counties : Berks, Carbon, Lehigh, Northampton, and Schuylkill.

Robert Frey, Aquatic Biologist,  
Bureau of Water Quality Management,  
16 Angelica Street,  
Reading, Pennsylvania 19602  
(Phone 215-378-4358)

Counties : Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry, and York.

Ronald Hughey, Aquatic Biologist,  
Bureau of Water Quality Management,  
Room 1003, Health & Welfare Building,  
Harrisburg, Pennsylvania 17120  
(Phone 717-787-9665)

Counties : Bedford, Blair, Cambria, Centre, Clinton, Columbia, Fulton, Hunting-  
ton, Juniata, Lycoming, Mifflin, Montour, Northumberland, Snyder, Somerset,  
and Union.

Gerald Miller, Aquatic Biologist,  
Bureau of Water Quality Management,  
736 West Fourth Street,  
Williamsport, Pennsylvania 17701  
(Phone 717-326-2681)

TESTIMONY OF THOMAS J. BARLOW

FOR

FOR NATURAL RESOURCES DEFENSE COUNCIL AND

ENVIRONMENTAL ACTION

ON S.1224

A BILL TO AMEND SECTION 216

OF THE FLOOD CONTROL ACT OF 1950

FUNDING AUTHORIZATION FOR SOIL CONSERVATION

"EMERGENCY WATERSHED PROTECTION"

October 3, 1975

My name is Thomas J. Barlow. I represent the Natural Resources Defense Council (NRDC). We come before this Committee with testimony in opposition to S.1224 as presently drafted. S.1224 would amend Section 216 of the Flood Control Act of 1950. This Section authorizes the Secretary of Agriculture to undertake "emergency measures" to safeguard lives and property from floods and the products of erosion on any watershed whenever natural force has caused a sudden impairment of that watershed.

For four years NRDC has followed closely the stream channelization activities of the Soil Conservation Service and opposed a considerable portion of the work planned by the SCS which would unnecessarily impair and destroy natural resource values such as water quality and fish and wildlife habitat. Let me emphasize, however, that we are not opposed to the SCS servicing legitimate drainage needs with properly planned work programs.

Over the past five years, as a result of a number of factors, including the passage of NEPA and the concern of many citizens with destructive channelization activities, we feel that improvements are being made in certain SCS programs focused on our Nation's streams and rivers. However, channelization activities carried out under the SCS's Emergency Watershed Protection Program financed by Section 216 of the Flood Control Act of 1950 are of deep concern to us. That is why we are here today.

S.1224 in its present form creates a vehicle for a giant step backward in the progress that has been made to bring this agency's programs in conformance with the Nation's evolving watercourse protection concerns -- a step backward which will hurt not only watercourse resources but could hurt the reputation of the SCS as well in future years. Indeed, as drafted, S.1224 allows the SCS to service demands other than those for which Section 216 was intended.

I would like to discuss past SCS abuses and ways in which these past abuses can be avoided by appropriate changes in S.1224. I would also like to discuss possible future abuses which could result from S.1224 as drafted and ways that modification of S.1224 might prevent such potential abuses. Before I start let me say that we do recognize the need for emergency watershed work following major disasters. Quick removal of debris and silt blockages in channels is often needed. Levees must be repaired. Scoured banks should be shaped. However, we also realize that once the emergency or disaster which caused the damage has passed, there is usually considerable time for proper planning and installation of more extensive work. This more extensive work should be planned and carried out with close interagency and interdisciplinary consultation and in compliance with NEPA procedures. We also recognize the need for a permanent fund to finance such repair work because the wheels of the federal appropriation process can grind too slowly to serve the needs for swift application of funds in disaster areas.

Past SCS Abuses With the Application of Section 216 Funds and Remedies

Following the destructive floods of hurricanes Camille and Agnes in the mid-Atlantic states, the SCS spent considerable Section 216 funds in stream "repair" work. Such "repair" work was not confined to stream bank shaping and blockage removal. SCS directed work crews carried out major channelization of hundreds of miles of stream without proper consultation or coordination with state and federal natural resource agencies, particularly fish and game agencies. The states of Virginia and Pennsylvania have prepared formal reports of SCS abuses in the 216 program following these disasters. To prevent future abuse, we would like to see language inserted in Section 216 to direct the SCS Administrator to coordinate with such natural resource agencies at the state and federal level and to make public applications for disaster work. We do not feel that agency regulations in this regard are sufficient to secure compliance from state and local SCS offices. We need the force of law. We would also suggest the insertion of language directing the Administrator to publicize applications for disaster relief assistance, publicize SCS plans for servicing these applications and publicly report periodically the status of work in progress so that other agencies and the public are informed as to what is taking place in watercourse areas.

Possible Future Abuses and Suggestions for Their Prevention

1. S.1224 would remove the present \$300,000 annual limit on funds available by the authority of Section 216. The effect of

this removal and the failure to insert any alternative ceiling in effect creates a permanent revolving fund for SCS work on streams and rivers anytime, anywhere, and in any dollar amount. All SCS work -- Small Watershed (P.L. 566), RC&D projects, etc. -- is in a sense designed to repair disaster damage or prevent emergencies. Therefore, it is entirely conceivable that over the course of time a great portion of the work programs funded through other authorities could be funded out of Section 216 funds without the constraints on unwise construction work that have been laboriously incorporated in these other programs. At a minimum, work that runs into road blocks in programs in these other authorities -- road blocks as a result of negative findings in environmental review, for instance -- this destructive work could be financed under the Section 216 authority and be accomplished without meaningful review. The simplest method of preventing such massive transfers is to place a dollar ceiling on this Section 216 authority. We would suggest a \$5 million dollar ceiling. We feel that this would be sufficient to service emergency watershed repair work. If individual major national disasters, or a series of major national disasters, occurred, this \$5 million dollar pool would provide sufficient funding for work to proceed while supplemental requests were forwarded to Congress. (I would point out that having no ceiling in this section does not obviate the possibility of supplemental requests. The SCS could exhaust or obligate the authorities from which 216 funds are drawn prior to

2. Since this funding is intended for repair of disaster areas, we feel that language should be included directing the SCS to spend this money only in counties that the President has declared to be National Disaster Areas. This modification would assure that your 216 money gets spent where it is really needed and not on ordinary works of modification in non-disaster areas.

3. So that the SCS does not fall prey to political pressures and concentrate funding in any particular county, we suggest that there be a spending limit of \$50,000 per county to be expended only during the term that the county has a National Disaster Area classification. We feel that this sum will get the emergency repair work done quickly and adequately.

With regard to environmental assessments of such repair work, we realize that the speed at which emergency repairs of certain kinds need to be carried out obviate a careful NEPA review because of the time involved for such analyses. We therefore concede that a programmatic EIS prepared by the SCS for each state would be sufficient if limited to particular types of disaster repair work such as debris and blockage removal, shaping of scoured banks. Such a programmatic review should outline the procedures for notification and coordination with state natural resource agencies, including fish and game agencies, of the planning and the performing of limited emergency repairs to assure a practical compliance with the intent of NEPA.

For major work of a permanent nature requiring extensive planning, we feel that individual plans should be prepared for each watershed

in which such work is to be carried out before such work begins.

We strongly urge these modifications in S.1224 to improve its focus toward the disaster repair needs that Congress intended to service in Section 216 and to assure that such work is carried out in a responsible fashion. We urge that S.1224 be carefully reconsidered and offer our assistance in its modification.

NATURAL RESOURCES DEFENSE COUNCIL, INC.,  
Washington, D.C., October 10, 1975.

Ms. ANN GARRABRANT,  
Senate Public Works Committee, Dirksen Senate Office Building, Washington,  
D.C.

DEAR Ms. GARRABRANT: I submit for the October 3, 1975, Water Resources Subcommittee Hearing Record the attached letter of March 15, 1973, from Francis W. Kemp to Mr. Benny Martin, SCS State Conservationist. Please include this letter with my testimony in the Hearing Record.

Sincerely,

TOM BARLOW.

[Enclosure.]

HUNTINGDON, PA., March 15, 1973.

MR. BENNY MARTIN,  
State Conservationist,  
USDA, Soil Conservation Service, Federal Square Station, Harrisburg, Pa.

DEAR MR. MARTIN: I am a District Director of the Conservation District in Huntingdon County. We had our first meeting since January 10 on March 14. This meeting was not attended by Area Conservationist, Donald Rapp, of your service. I understand that he had to be out of town on business.

Much to my surprise I was informed of the following: 1st . . . That \$5,000,000 had been given to SCS in Pennsylvania for the purpose of fixing up streams. This was to be parceled out on a first come, first served basis. (On my insistence our Executive Assistance read the directive which gave equal weight to the restoration of land ravaged by Hurricane Agnes as to stream work) 2nd . . . As a district we had requested the SCS to make a survey on County streams and negotiate immediate contracts for work. This was to be given priority over all other work \* \* \* This was not authorized by the District but by the Executive Assistant of the District who exceeded his authority as all projects heretofore have been acted on by the Directors.

Frankly I object to stream clearance projects of no value to the county or agriculture being forced down our throats by an overzealous staff. Your staff is well qualified in soils work and know nothing whatsoever about water. If this is a state directive to spend \$5,000,000 as soon as possible I believe you should rethink your objectives. Surely your men do not need stars on their report cards or brownie points.

I have been informed that you have approved projects on Murrays Run and Shoops Run. The first does not flow through agricultural land and in fact all the small valley raises is deer, groundhogs and grouse. A still did exist on the headwaters at one time. Shoops Run is an acid mine water stream and the work needed there is beyond the directives of SCS.

Now to make matters worse a letter has been directed to every township supervisor in the County advising them of the funds available for stream clearance without one word of these funds also being available for work on the land where it would increase the economic base of the area.

Frankly, I feel if your staff has so little to do they must run around and dream up boondogling projects which is the same as pouring money down a rat hole that perhaps you are over staffed. The pressure seems to be coming from your Somerset office but you are in charge of the State.

As a Conservation District Director and a member of the Huntingdon County Planning Commission I know the value of the work that SCS has done in past years. The soils maps, the conservation plans on farms are invaluable. I've had the best of personal relations with local representatives of SCS and the former State Conservationist Mel Davis. I certainly hope that you can put your house in order.

Meanwhile, I would suggest that channels of communication be established between other Agriculture Departments, local Planning Groups and State Agencies such as D.E.R. I am certain that a one day seminar set up by you and the Fish Commission with Jack Miller, Fisheries Biologist in charge would benefit Area Conservationists throughout the Commonwealth.

Five million dollars is quite a carrot on a stick. I know many officials, district directors, etc that would wring their own necks if this sum was waved in a circle around their heads. Let's not tempt them.

Sincerely,

FRANCIS W. KEMP.

NATURAL RESOURCES DEFENSE COUNCIL, INC.,  
Washington, D.C., October 9, 1975.

Re testimony of NRDC and Environmental Action in opposition to S. 1224.

HON. PETE V. DOMENICI,  
Dirksen Senate Office Building,  
Washington, D.C.

DEAR SENATOR DOMENICI: In response to your questioning at the Senate Public Works Water Resources Subcommittee hearings on October 3, 1975, I furnish the following for the Hearing Record.

Abusive ditching of streams and rivers by the Soil Conservation Service (SCS) with 216 emergency funds could continue in the future because of the nature of the SCS relationship with local Soil and Water Conservation Districts (SWCD) in the spending of these funds.

It is SCS policy *not* to furnish financial assistance for "emergency works of improvement" unless such work is *sponsored* by entities such as local Soil and Water Conservation Districts. In many areas of our Nation a major priority of these local SWCD organizations is improved agricultural drainage. The combination of SCS policy and SWCD priority puts a local SWCD in a position to exact a much greater degree of "emergency improvement" of streams and rivers than needed to repair that flood damage in need of immediate repair. Further, because of their agricultural priorities, the SWCD's may bias the spending of such 216 "emergency" funds to benefit agricultural lands rather than settled areas where the protection of lives and property warrant immediate repair of storm damage. And because of the SCS's special relationship with SWCD's, it is not unlikely that the bulk of 216 funds at the SCS's disposal would be disbursed under SWCD auspices rather than through other eligible entities at local and state levels.

Soil and Water Conservation Districts have performed valuable service to the Nation's agricultural sector in the past. However, I would feel more confident that they will become better equipped to serve the increasingly pressing multiple resource protection and conservation needs of the Nation if they were rooted in a broader popular franchise. Currently, the officials of many SWCD's are appointed from the agriculture sector. In those states where elections are specified as the method of selection of SWCD officials, the nominating procedures, the limiting of voting eligibility to landowners, the scheduling of elections at other than normal voting periods, and the siting of polling places at inconvenient locations often assure a very limited and parochial interest base for the policies these organizations evolve.

If I can provide any further broadening of the points raised in my testimony in opposition to S. 1224 as currently drafted, please let me know.

Sincerely,

THOMAS J. BARLOW.

#### STATEMENT OF HON. JOHN G. TOWER, U.S. SENATOR FROM THE STATE OF TEXAS

Senator DOMENICI. Senator, I first want to apologize for the delay. We had the witnesses on two different occasions. We recessed them to take Senators Bellmon and Thurmond's statements and then we came back to them. I thought we ought to finish them.

Senator TOWER. I understand, Mr. Chairman.

I am the petitioner. I certainly feel no apologies are due me from the committee.

I appreciate this opportunity to add my support to the implementation of watershed work plans under consideration by your committee. Five of the projects on your agenda are located in the State of Texas, and I am pleased that the committee has done such a thorough job of investigating the merits of each of these plans.

Before I discuss each of these projects, I want to express my personal thanks, and the appreciation of the people of Texas, for your concern for the preservation and development of water resources

throughout the United States. I think we are all of the same mind that our precious land and water resources must not be neglected. We appreciate the work you have done to assist resource conservation, and the time you have given to these hearings.

Mr. Chairman, a great deal of work has gone into the process which brings us to this point today. Initially, these plans were drawn up locally by farmers, ranchers, local community leaders, and, of course, the efforts of Government agencies concerned with soil and water conservation, especially the Soil Conservation Service.

In some cases, the projects which are being considered have been subjected to several studies by experts in water management over a period of several years. I know there is a great deal of technical data to support each of these plans which your committee has prepared, so I do not plan to go into these technical supporting arguments at this time. With your indulgence, however, I would like to briefly detail what I consider to be the outstanding benefits which will accrue from each of these projects.

#### LEONA RIVER WATERSHED

As in most of the plans under consideration, the Leona River watershed work plan seeks to correct recurring flood damage problems in the impacted area. The conclusions of the soil conservation service concerning the impact of this project indicate that 110,000 acres will be positively affected when this plan is implemented, at a benefit level of more than \$5 million over the life of the project.

The ratio of benefits to costs is one of the highest of all the plans under consideration by the committee, with benefits running twice as high as the projected cost. I might add that the cost of the project, at \$2,390,000, is one of the lowest proposed. In terms of putting conservation dollars where they will do the most good, I feel this project deserves the committee's close attention and approval.

If I may, I would like to discuss one issue which may concern some members of the committee, namely, the role of the Soil Conservation Service in what appears to be an urban conservation project. There is some question whether the Corps of Engineers might not be the more appropriate agency of Government to handle such a project in a partially urban setting.

I, too, was concerned that the intent of Congress might not be best served by such a switch in jurisdiction, and I checked with both the Soil Conservation Service and with the Corps of Engineers. I am glad that I did, because the answer I got to my question revealed that these two agencies are setting some sort of record in getting along with each other. It is my understanding that when a watershed plan involves a grey area, where jurisdiction may be open to question, that the agencies work out the solution acceptable to both. It will be shown later, I think, by the representatives of the Soil Conservation Service, that this process has taken place concerning the Leona River watershed work plan and other plans, and that no jurisdictional problem exists.

Mr. Chairman, as I said, I was concerned that by giving the SCS responsibility to implement this plan we might not be giving the task to the appropriate agency. However, I am convinced that this concern is unjustified, given what I have learned about the procedures for resolving these questions. All too frequently, we in the Senate are faced

with disputes arising from the hurt egos of one bureau or another agency, and it is refreshing to know that somewhere in the bureaucracy people are working together.

#### PALUXY RIVER WATERSHED

Development of the Paluxy River watershed is essential to the development of the impact area and will provide total water storage of more than 57,000 acre-feet. That this kind of storage is needed and ought to be developed, I think, is not open to question. The question here is whether this plan will provide that kind of benefit at a reasonable cost. I think the facts support an affirmative answer.

The Federal share of this project is placed at less than 60 percent by the Soil Conservation Service, one of the lowest Federal share ratios of any of these projects. The ratio of benefits to costs is 1.7 to 1, which certainly represents a good return on our investment. And I think it is important to look at the contribution being made by non-Federal sources of funds. Almost \$3 million has or will have been contributed in addition to the funds provided by the Federal Government. This is a significant sharing of expense in this project.

Finally, I would just note that about 250,000 acres of land will benefit from the implementation of the plan, an enormous resource which can be protected by your approval of the Paluxy proposal.

#### SAN FELIPE CREEK WATERSHED

Mr. Chairman, if you have ever had occasion to be in Del Rio, Tex., when we get a good, long rain. I am sure it would take very little to convince you of the need for the flood control project proposed in the San Felipe Creek plan. The drainage area of 30,000 acres affected by the plan consists of residential area constantly threatened by water in this flood plain area.

What it takes to correct this perennial problem. Mr. Chairman, is a modest expense—less than half a million dollars by the Federal Government. Yet this project will provide benefits totaling almost \$4 million over the course of the project. The ratio of benefits to costs is an unbelievably high 6.6:1, by far the most "dollar gotten for dollar given" of any project under consideration by this committee.

Again, Mr. Chairman, I would like to point out what will be confirmed by later witnesses from the Soil Conservation Service: There is no jurisdictional dispute involved here. The Corps of Engineers has studied and approved this proposal and concurs that the Soil Conservation Service is the proper agency of Government to oversee this project's completion.

#### RED DEER CREEK WATERSHED

I think that this plan, as much if not more than others in Texas which are being considered today, provides for significant benefits to the area of impact. Not only will development of the Red Deer Creek watershed protect an area of more than 200,000 acres of land from flooding and resource depletion through erosion, but the plan also calls for storage of some 40,781 acre-feet of water, second only to the Paluxy River project of which I previously spoke.

These are considerable benefits, outweighing costs of the project by a ratio of 3.1:1. That is \$3 for every dollar invested, and I would just like to say that I wish I were able to make that sort of investment every day. The benefits, moreover, accrue not only to the residents of the Red Deer Creek area, but to the economy of the area, as well. Besides the water supply which would be provided by the structures built, the project would preclude the perennial damage to trackage of the Atchison, Topeka & the Santa Fe Railroad which runs near Deer Creek. Further, implementation of the plan will preclude the railroad having to move some 7 miles of track to higher elevations, at a capital cost to the railroad of some \$3 million. I believe this economic benefit, coupled with the social and environmental benefits to be realized from adoption and implementation of the Red Deer Creek project are sufficient to justify its approval.

#### M'CLELLAN CREEK WATERSHED

Mr. Chairman, I have purposely waited until this time to discuss the proposed plan for development of McClellan Creek, because of the unique circumstances surrounding the project, owing to the location and effect of the watershed on our neighbors in Oklahoma.

The controversy surrounding McClellan Creek goes back a long way, Mr. Chairman. And while the controversy continues, the people in Carson, Gray, and Donley Counties in Texas suffer the harmful effects of the lack of water resources management in this watershed.

The essence of the problem is the contention that management of the McClellan watershed to control flooding and to build up water resources would deplete the water available to the Altus, Okla., Reservoir, which is fed by the Red River, of which McClellan Creek is the northern fork.

For years, Mr. Chairman, the rights of Texans to use, manage, and develop their own water resources have been blocked by unwarranted claims and faulty arguments. I would hope that the committee would listen carefully to the experts from SCS who will point out the inconsistencies, inflated figures, and miscalculations used to support the charge that Texas wants to deprive Oklahoma of its water. If it were so, I can assure you, Mr. Chairman, that I would not support this project. I have instructed my staff to investigate these charges and determine if we would be significantly harming the waterflow to the Altus Reservoir by implementing this plan. I went so far as to draft remarks for presentation today which would not have expressed support for this plan, if it would be significantly detrimental to our neighbors.

My staff has contacted persons on this committee staff, on the staffs of my colleagues from Oklahoma, and the staffs of the Soil Conservation Service. From the information I can obtain, there will be no significant loss of water to Altus. And that being true, I most urgently request that the committee act in approval of the McClellan Creek watershed plan, in order to gain the benefits which accrue to its completion.

Mr. Chairman, I have taken considerable time in these remarks, and I thank you for your indulgence. I do not often have the opportunity to appear before your committee for such good causes, and I appre-

ciate this opportunity. I want to thank you again for your dedicated effort in this field, and I just want to say that I applaud your concern for protecting our environment, enhancing our national resources, and enriching the lives of our citizens.

Mr. Chairman, unfortunately I have other commitments which force me to cut short my appearance here. I will be anxious to hear the outcome of these hearings, and I thank you again for giving me some time to speak.

I am delighted to see my distinguished colleague from New Mexico presiding. I think he understands we have the water problems that we have in our great southwest and in the area that I mentioned, which borders his great State.

If there is anything that makes us happy is to have a little mud on our boots.

Senator DOMENICI. We appreciate your testimony. I think you do understand that the distinguished Senator from Oklahoma appeared previously to your testimony. He certainly did not object to the concept and concern that you express here. But there are some differences of opinion with reference to the effect on their water users.

Senator TOWER. I understand that, Mr. Chairman. I am hopeful these can be resolved.

Senator DOMENICI. We also will make constructive suggestions with reference to being able to do both what you want and yet eliminate the problems they see.

Senator TOWER. Thank you, Mr. Chairman. I think you know us southwesterners have to stick together or indeed hang separately.

Senator DOMENICI. Indeed, especially when it comes to energy and water.

Senator TOWER. Thank you, Mr. Chairman.

Senator DOMENICI. Thank you very much, Senator.

#### STATEMENT OF ROBERT B. HARBISON, LUGERT-ALTUS IRRIGATION DISTRICT, ALTUS, OKLA.

Senator DOMENICI. You may proceed.

Mr. HARBISON. I will introduce myself as Robert B. Harbison, attorney of Altus, Okla. I appear here in a dual capacity in that I am here as counsel for the Lugert-Altus Irrigation District, a municipal corporation of some 400 landowners. I also appear as counsel for and spokesman for the city of Altus, Okla., for the Oklahoma Water Resources Board and for Mr. Orville Saunders as the Oklahoma representative on the Red River Compact Commission.

The Red River Compact Commission is comprised of four representatives, one each from Arkansas—

Senator BURDICK [presiding]. Would you put your mike a little closer?

Mr. HARBISON [continuing]. One each from Arkansas, Louisiana, Texas, and Oklahoma; their duty and purpose being to allocate the waters of the whole of the Red River basin.

Senator DOMENICI. Mr. Chairman, could I interrupt for one minute? I have to leave. Mr. Chairman. I have a series of questions for Mr. Harbison and the SCS. I would like to leave them and ask that they respond to them for the record.

Senator BURDICK. Without objection.

Senator DOMENICI. Thank you, Mr. Chairman.

Mr. HARBISON. Senator, may I make one request before you leave?

Senator DOMENICI. Surely.

Mr. HARBISON. In this—I was so pleased to see the Senator from New Mexico sitting on the committee. It will be the request of the four representatives, the four agencies that I represent, that we follow the policies of New Mexico in the solution of the problem that here exists.

The policies of New Mexico will solve the whole of the controversy that here exists between Texas and Oklahoma. Briefly the problem is this: There has been impounded at Lake Altus, 18 miles north of the city of Altus, on the North Fork of Red River, 133,000 acre-feet of water; such is used as a municipal water supply for the city of Altus and the irrigation of approximately 55,000 acres of land. The waters originate in Texas on the North Fork of Red River. Texas is proposing, by this McClellan Creek soil conservation project, to impound in-flood control structures, the flood waters of McClellan Creek.

The drawdown valve of retarding structures as presently designed in the work plan of the project would leave something over 2,000 acre-feet of water in permanent storage, after the flood has passed. And, since the long established policies of the State of New Mexico serve as the basis of a complete solution of the problem here presented, I have requested of the Senator from New Mexico his consideration of what I have to propose and a moment of his time. For certain it is that the policies as followed by the State of New Mexico and the other States of the arid regions of the west have long since established a basis of cooperation and comity upon which the irrigator, the flood control project and the soil conservationist can and do live happily together.

The retardation on the upper regions of the North Fork that is, by this McClellan Creek project, would retain permanently something over 2,000 acre-feet of water. The solution by which Texas can have everything they ask and more is this: We all know that the true need of any flood control project is an empty basin, in that an empty basin will handle more of the flood when it comes than will a basin that is partially filled as is here suggested by the work plan of the McClellan Creek project.

It is our suggestion that the escape valve on each of these retarding structures, there are 13 of them, be placed at the valley floor rather than at the level as presently designed. The present design retards water; place the ungated escape valve at the valley floor and all of the water will drain out. You will then be prepared for another flood with a completely dry basin.

I inquired of the arid regions of the West as to their policies and as to their practices on flood control projects upstream from existing impoundments for irrigation and municipal uses, as is here the case.

Senator Domenici—I trust you may know him personally—I quote from the State engineer of New Mexico. For upon inquiring as to how New Mexico and the other arid regions of the West handled such a problem as is here presented I found myself inquiring of those States which have had much more experience in the field of irriga-

tion than is true of Oklahoma and Texas, being, as they are, in the semi-arid region of our country.

I quote from a letter of March 22, 1971, from Mr. S. E. Reynolds, State engineer, State of New Mexico,

All of more than 50 PL 566 detention structures"—(that is what they are referring to here, Public Law 566)—"All of more than 50 PL 566 flood detention structures that have been constructed in New Mexico are for flood control only and none are permitted to impound water. All PL 566 structures constructed to date have been ungated so as to permit the run off from a 25-year storm to drain within a 96-hour period.

Senator Domenici, that is the policy of your State. It is the policy and the practice of all the States of the arid regions of the West. It will solve the controversy that exists between Oklahoma and Texas here, if Texas will but be required to redesign their retarding structures so as to place the escape valve at the valley floor rather than leaving it at the level above the valley floor as presently designed, the effect of which would be to permanently impound something over 2,000 acre-feet of water.

You might say that 2,000 acre-feet of water is a small item. It is, however, a matter of what this proposed project portends. I quote now from the testimony of Mr. Robert Price at the hearing before this committee as held on July 30, 1970, on this very same project, he being the then-Congressman from this area of Texas.

"The fate of this project," he says, in support of the McClellan Creek watershed project, "The fate of this project will determine that of three other Texas watershed projects that are currently under consideration."

The fact is that the waters that have been impounded at Lake Altus since 1933, and beneficially used since that time, have proven to be inadequate for the purpose intended, there actually having been received into the reservoir 73 percent of the waters actually needed for full implementation of the irrigation and municipal water uses as anticipated.

It thus means that every acre-foot possible must now be conserved. If by this project that is presently before the committee, 2,000 acre-feet more are taken away from Lake Altus, if that sets the precedent by which three additional projects from Texas can be implemented, there will be a nibbling away of the very lifeblood of 55,000 acres of irrigated lands and of the municipal water supply of the city.

It has long been determined that it is just plain not good economy to impound water, spend millions upon millions in the leveling of lands, the concreting of irrigation ditches and the transportation of dry lands to irrigation farming and then to destroy such a reservoir by upstream retarding structures of any kind. On this point the law of the land is plain—exceedingly plain.

Texas expresses their legal view as being—"Water that falls in Texas belongs to Texas and is in no way committed to other States into which it may flow."

To the contrary, the statutory law of Texas, and I quote from section 7472 of the Texas code, provides: "As between appropriators the first in time is the first in right." That is the basic fundamental precept of Western Water Rights Law as recognized by the Senator's home State; as recognized by Colorado, as recognized by all of the

arid regions of the West, and it was from the law of those States that this basic and fundamental rule of water rights priority was adopted and codified by the Texas statute.

As between appropriators, it declares that the first in time is the first in right. Oklahoma follows that same identical, fundamental precept of Water Rights Laws. But Texas here declares that such rule of priority has no application to an interstate stream.

The declared ruling of the U.S. Supreme Court is to the contrary. The Supreme Court of the United States has ruled that where two States are in controversy over the waters of an interstate stream, and where each of such States—in the adjudication of rights between their own citizens on an intrastate stream—follow the rule of priority, that is, the “first in time in the first in right,” then should those two States become involved in litigation over the waters of an interstate stream, then that same rule of priority will be made to apply in determination of the issues between the contending States. In the case of *Wyoming v. Colorado*, 259 U.S. 149, the Supreme Court ruled as follows:

The appropriator first in time is prior in right over others upon the same stream and the right, when perfected by use, is deemed effective from the time the purpose to make the appropriation is definitely formed and actual work upon the project is begun.

Mr. Chairman, it was on July 13, 1939, that the Secretary of the Interior gave notice of the appropriation of all of the unappropriated waters of the North Fork of Red River for the construction of the Lugert-Altus project at a point on the North Fork 18 miles north of the city of Altus.

I have before me a complete report of the Lugert-Altus project introduced by Senator Thomas of Oklahoma bearing date of March 1, 1938. Based upon the approval of that report such project, commencing in 1939 and continuing through 1945, the proposed impoundment of the waters of the North Fork was made.

Since that time, the city of Altus has relied upon that impoundment as a municipal waters supply. The Lugert-Altus Irrigation District has relied thereon as a source of water for the irrigation of 55,000 acres of land in southwestern Oklahoma, both acting and relying upon the stated rule of priority that “the appropriator first in time is first in right,” all as declared by the statutes and the judicial rulings of the States of Texas and Oklahoma, and as approved and declared by the rulings of the Supreme Court of the United States.

The city of Altus, and the Lugert-Altus Irrigation District, by a valid contract of assignment from the Secretary of the Interior, acquired a vested and legal right to the use of all of the unappropriated waters of the North Fork as of July 13, 1939. Now for more than 35 years, a way of life has been established, based upon the receipt of those waters, and now that way of life is made to depend upon the continued receipt of those waters.

The project here under consideration would take away from that way of life 2,000 acre-feet. If it sets a precedent, there will be three more. Where they will end, we do not know, except that we do know that nibbling away, in time, there will be insufficient water for the maintenance of the city of Altus, a city of between 25,000 and 30,000 people, and inadequate water for the irrigation of 55,000 acres of land.

Again, I say that it is just plain, poor economy. It is tragic economy. It is violently destructive economy, to say to those on the upper reaches of a stream as previously developed downstream for irrigation that you may impound and appropriate, for flood control and soil conservation purposes, such waters, long since appropriated for beneficial uses of irrigation and municipal uses, when by merely lowering the ungated valve of proposed retarding structures, you can improve and greatly enhance your flood control benefits by maintaining a dry basin, rather than a partly filled one, and at the same time, allow those waters to go on down to the point where they were appropriated and placed to beneficial use as of July 13, 1939.

Mr. Chairman and Senator Domenici, it is with complete sincerity that we urge upon you and urge upon the committee, that the committee, should not allow the nibbling away and the destruction of an established economy and an established impoundment of waters when the whole thing can be avoided by giving Texas everything they want in the way of flood control and yet maintain those waters for the purpose for which they have been legally dedicated since July 13, 1939.

It is in that spirit that I address the committee. I received notice of this hearing only a few days ago. I make no complaint in that regard. I have lived with this problem for 20 years. I should be able to discuss it either on an impromptu basis or extemporaneously as I have done.

In former appearance before committees of this type, I believe I have ascertained that it is the policy of the committee that the one who testifies orally be given an opportunity to edit his remarks at least for correction of grammatical errors and the like. I would like that opportunity.

If, at that time, I see the necessity of adding a supplemental written statement to what I have said, before the committee, I would like the privilege of doing so.

Senator BURDICK. You may have that privilege within 2 weeks. I understand you have a controversy here between Oklahoma and Texas.

According to the record here, this plan was approved and recommended by the Soil Conservation Service back in 1967. It was also approved by the House Public Works Transportation Committee in September 1969. Apparently this has been in argument for some time.

Mr. HARBISON. Yes, sir.

Senator BURDICK. Senator Bentsen of Texas asked me to put to you two questions. Now they will be put.

Mr. HARBISON. Very good, sir.

Senator BURDICK. If there is concern over structures effecting the inflow of waters at Lugert-Altus reservoir, why did the State of Oklahoma approve the construction of Timber Creek Watershed project which is also above the Lugert-Altus Watershed?

Mr. HARBISON. I anticipated that question because that has been the often-repeated question as promulgated by Texas questionnaires.

There is a difference between Timber Creek and McClellan Creek as there is between night and day. There was no downstream impoundments on Timber Creek that could be damaged or depleted by the impoundment on the upper regions of Timber Creek of soil conservation, flood control, or other types of projects.

Senator, the Red River is comprised of three branches: the North Fork (the one northernmost), the Salt Fork, and then the southern-

most branch divides Texas and Oklahoma which is referred to as the Prairie Dog Town Fork.

Only the North Fork has been developed in the sense of an impoundment for beneficial purposes. There have been no impoundments of any kind on the Salt Fork or on the Prairie Dog Town Fork. It would be perfectly proper for Texas on the Salt Fork or the Prairie Dog Town Fork to construct flood control projects of the identical design as they here present and of the identical design that Oklahoma did place on the Timber Creek.

The reason for that being that there are no downstream impoundments of beneficially used waters that would be damaged either by flood control or soil conservation projects on the upper regions. On the other hand, on the North Fork, there is an entirely different problem, in that the construction of retarding structures, flood control, soil conservation, recreation, or otherwise on the upper region of the North Fork and of McClellan Creek, will deplete waters that long since have been dedicated to a beneficial purpose.

There is no such depletion by the construction of such a project on Timber Creek. That is in answer to such inquiry.

The question as here propounded by Senator Burdick was misunderstood by the undersigned witness. In responding to the question concerning the mentioned flood control and soil conservation project on Timber Creek, as approved by the Oklahoma Water and Resources Board, through error and misunderstanding, the undersigned as witness treated and considered Timber Creek as being a tributary of an undeveloped stream such as the Salt Fork or the Prairie Dog Town Fork of Red River. The truth is that Timber Creek—like McClellan Creek—is a tributary of the North Fork of Red River and the same factual and legal situation exists as to Timber Creek as presently prevails as to McClellan Creek, except that the whole of Timber Creek is within the State of Oklahoma, while the whole of McClellan Creek is within the State of Texas.

And while, as is indicated by the question of Senator Burdick, a soil conservation and flood control project similar to the project here under consideration, was approved by the Oklahoma Water Resources Board, the records of the Oklahoma Water Resources Board will disclose that the Timber Creek project, with this witness as its legal counsel, was strenuously opposed by the Lugert Altus Irrigation District and the city of Altus, in the same sense and for the same factual and legal reasons as the McClellan Creek project is here opposed by the four legal entities for whom this witness presently appears. The Timber Creek project was approved by the Oklahoma Water Resources Board in the year 1964. An appeal from such order was not taken by the Lugert Altus Irrigation District or the city of Altus. However, it was there and then made to appear that any further such proposed project—if the same was to be given consideration—would meet with legal action by way of injunctive relief as constituting an invasion of the vested legal rights, as a prior appropriator, of the city of Altus and the Lugert Altus Irrigation District. Since that time, there has been no further such project considered by the Oklahoma Water Resources Board. And such State agency, in reversal of its form of action as taken and entered on the Timber Creek project, as mentioned, now joins with the city of Altus, and the Lugert Altus Irrigation District,

and the Oklahoma representative of the Red River Compact Commission, in opposition to the McClellan Creek project as here proposed.

Senator BURDICK. I understand that the Altus project has been less than successful in terms of irrigation source as was meant to be and well below its designed capacity.

Would you agree that had this Altus met its original expectations there would be no concern over McClellan Creek?

Mr. HARBISON. I would say this, Senator, that the plan of the Altus project which was way back in 1939, anticipated the receipt of more waters than they have actually received. They have received 73 percent of the waters that they expected to receive, which makes each acre of water all the more vital to the implementation and to the future of the project. But the fact is this, that even though they received only 73 percent of the waters they anticipated, the city of Altus, a town of 9,000 at the time the project was constructed, is now a city of between 25,000 and 30,000 people.

The land comprising the district, even though they receive only 73 percent of the water that was anticipated, have tripled and quadrupled in value. The value of the crops grown on those lands has been magnificently enhanced and increased.

Prior to the construction of Lugert-Altus, the Bureau of Reclamation had limited its projects to the semiarid regions of the United States, areas wherein irrigation was relied on entirely. This was the first project that was approved, implemented, and constructed in the semiarid region of our country. It has proven to be wonderfully successful in the enhancement of the economy of the area and of the population thereof.

So while we would like to have 100 percent of the waters anticipated that we would receive, with the 73 percent that we have received, it has proven to be wonderfully successful.

But the fact that we are presently receiving and have received only 73 percent of what was anticipated, it is rendered all the more vital that there be no nibbling away of that 73 percent by a flood control project so designed, that it will further deplete waters as heretofore appropriated for irrigation and municipal uses. Particularly is this true when by proper design of the proposed retarding structures, Texas can have and receive all the flood control benefits they here seek without depleting waters heretofore dedicated for beneficial uses.

Senator BURDICK. I have no more questions. I just want to point out one thing for the record. When you refer to the Red River, you are not referring to that Red River that flowed between that beautiful valley between North Dakota and Minnesota and runs into Canada?

Senator DOMENICI. Mr. Harbison, I have one question. You referred to Mr. Reynolds and our projects in New Mexico. I certainly agree he is an expert; probably the best in the entire West on water. We are delighted to hear his views. Let me ask you this, do you believe that the Secretary of the Interior has the kind of authority that that proclamation creating Altus indicates to appropriate all the unappropriated interstate water to a project in one State?

Mr. HARBISON. Not by his word, Senator, but by the act of construction.

Senator DOMENICI. Then the law comes into effect afterward?

Mr. HARBISON. That is right and establishes the effective date and the established priority as of the date the notice was given. The Secretary of Interior, as a matter of decree, had no power whatever to appropriate waters, but his notice of intention to construct the project and his ultimate carrying through and constructing so establishes the legal appropriation. It is the act of construction that creates the legal right.

Senator DOMENICI. Has the application, the acreage application to beneficial use from the Altus Reservoir, been growing if you were to chart it?

Mr. HARBISON. Senator, it has not been growing in that the landowners within the proposed district voted on the boundaries of the irrigation district at the time it was formed. It is a municipal corporation formed by the vote of the landowners within the geographic boundaries of the district. The Bureau of Reclamation laid out graphically on the map what land they felt could be properly irrigated and leveled and prepared for irrigation and economically handled.

Looking back, this is back to 1939, I was a lot younger lawyer than I am now. Looking back upon it and the history we have had since, it is ironic to think that some of the landowners within that district opposed the formation of the district. We let them out. If they didn't want in, we let them out. They have tried every way in the world in the years past to get back in. They cannot for the simple reason we don't have enough water to irrigate the committed lands that presently are in the district.

Senator, the district is not growing. The district is set legally. You can get out if several acres of land are being taken out for the expansion of the city of Altus or the like, or if you want to construct a factory. Such lands could not be irrigated so it is taken out of the district. But there is no possibility whatever of a landowner owning land adjoining this district or even owning land within the geographic boundaries of the district, that is not included in the district, no possibility whatever of him getting in.

The district is not growing. It is set. It is limited as to the amount of water it has. We can't supply water for any more acres than presently comprise the district.

Senator DOMENICI. You are telling us that if that particular river is between those two States, if it was a closed basin, which Mr. Reynolds is used to dealing with as you must know, there is no excess water in that basin available?

Mr. HARBISON. No; there is no excess water in the basin of the North Fork. Every acre-foot of it has heretofore been legally appropriated, and every acre-foot of it has to be conserved, and with every acre-foot of it being so conserved, there isn't enough.

What I am saying to the committee is this: It is poor economy to impound 2,000 acre-foot in retarding pools, suitable only for duck hunting and fishing, and opening it to the ravages of loss by evaporation, when by merely placing your escape valve at the valley floor, that 2,000 acre-feet of water would flow on down the stream and used for the beneficial purposes to which it has long been legally committed.

Senator DOMENICI. Thank you.

Senator BURDICK. I would assume from the answer to the last question, that there must be some support for this impoundment from the wildlife and recreation interests?

Mr. HARBISON. I have not heard of it, Senator. I have not dealt with them in any particular way. It may be; I just don't know.

Senator DOMENICI. It is the first I ever heard of it. Thank you very much.

Mr. HARBISON. Thank you.

[Mr. Harbison supplied the following:]

#### STATEMENT OF LUGERT-ALTUS IRRIGATION DISTRICT

The views of the Lugert-Altus Irrigation District in opposition to the work plan and design of the McClellan Creek Soil Conservation and Flood Control project as presently before the Committee for consideration are set forth in the proceedings and hearing of the Subcommittee on Flood Control—Rivers and Harbors, of the Committee on Public Works of the United States Senate, Ninety First Congress, Second Session, as held July 30, 1970. The views as there expressed are reaffirmed, and are briefly to be supplemented hereby.

The District affirms and approves of the views as expressed by its counsel, Mr. Robert B. Harbison, in oral testimony as a witness before the Committee in hearings as held October 3, 1975.

A. The District delineates its legal views as follows:

1. Excepting only waters for which a proven need is established for domestic and municipal uses, that the District holds and possesses a prior right, dating from July 13, 1939, to the uses of all of the waters of the North Fork of Red River originating above the site of the Lugert-Altus reservoir.

2. That any claim to such waters as heretofore appropriated for beneficial uses by the District for irrigation and municipal purposes will be given recognition by the District only when expressly covered or established by compact agreement between the states of Oklahoma and Texas, or a decree of the Supreme Court of the United States.

B. The District delineates its factual views as follows:

1. Factually, as distinguished from the legal issue as presently existing, it appears to the Lugert-Altus Irrigation District that a simple solution exists of the confrontation between this District, the City of Altus and the sponsors of the proposed McClellan Creek Project. Such solution lies in this:

It is obvious that the true need of any flood control plan is an empty reservoir, rather than a filled or partly filled reservoir. Contrary thereto, the present work plan of the McClellan Creek Project calls for the permanent impoundment in its various retarding structures of something more than 2000 acre feet of the waters of McClellan Creek. To the extent that such work plan, under the guise of flood control, contemplates the permanent impoundment of the waters of the North Fork, the same infringes upon the vested legal rights of the City of Altus and the Lugert-Altus Irrigation District to the use of such waters for municipal and irrigation purposes. By reason thereof such proposal has heretofore been opposed by Oklahoma interests before the Congress. At both the legislative level—and if need be, at the judicial level—such opposition will continue.

The fact is that a simple solution exists of the existing confrontation between Oklahoma and Texas under which solution Texas can receive and enjoy the soil conservation and flood control benefits as contemplated by the work plan of the McClellan Creek Project and without depletion of the municipal and irrigation uses to which said waters have been legally committed for some 35 years. Such solution lies in the simple amendment of the work plan of the Project so as to provide for each retarding flood control structure an uncontrolled escape valve at the valley floor of such dimension and design as will permit the runoff from any major storm to drain within a period of 96 hours. Our sister states of the arid regions of the west, wherein irrigation was and has been practiced for decades prior to the entry of Oklahoma and Texas into the field of extensive irrigation, have long recognized and required such a design of soil and flood control structures on any stream upon which there is a downstream irrigation or municipal impoundment. The Soil Conservation Service of the United States has heretofore recognized the advisability and necessity of such a practice. In evidence thereof, we quote from a letter from Mr. S. E. Reynolds, State Engineer of New Mexico, as follows:

"All of more than fifty P.L. 566 flood detention structures that have been constructed in New Mexico are for flood control only and none are permitted to impound water. All P.L. 566 structures constructed to date have been ungated so as to permit the runoff from a 25-year storm to drain within a 96 hour period."

All of the benefits of flood control and soil conservation are available to interested governmental entities under PL-566, or otherwise, through the simple expedient of an ungated valve at the valley floor. The Soil Conservation Service has so recognized and such is the design and such is the course generally followed in its PL-566 projects in the arid regions of the west in instances where beneficial downstream appropriations have been made, and the rights of a prior appropriator have vested, such as is true of Lugert-Altus on the North Fork. New Mexico, Colorado, Arizona, Wyoming, Utah, and like states, over a period of many decades have faced the problems presented by way of coordination of the needs and demands of soil conservation and flood control on streams upon which the rights of downstream irrigators have vested. The Soil Conservation Service, under PL-566, and generally, has joined in the solution of such problems in the approval of flood control and soil conservation structures so gated as to permit the runoff from a 25-year storm to drain within a period of 96 hours. Both Oklahoma and Texas are new in this field. It would appear that both states can well profit by the long experience of, the lessons learned by, and the solutions as formulated and observed with success, and with lack of friction between irrigator and soil conservationist, by our sister states in the arid regions of the west.

The Lugert-Altus Irrigation District accordingly urges upon the Committee that the proposed McClellan Creek Project be approved for financing and funding with federal funds only upon a redesign of its proposed retarding structures so as to cause the same to conform to the long established and successfully operated standards and practices of the States comprising the arid regions of the west, as to which standards and practices specific reference is above set forth.

Respectfully submitted,

LUGERT-ALTUS IRRIGATION DISTRICT, ALTUS, OKLA.,

MILTON VAUGHN.

*Chairman of Board of Directors.*

MURRAY WILLIAMS,

*Member.*

H. E. PICKETT,

*Member.*

JOHN COLLINS.

*Manager.*

Senator BURDICK. Our next witnesses are Edwin M. Robbins, president of the Mississippi Association of Soil and Water Conservation Districts, Shannon, Miss., and Victor Vaccaro, flood control contract officer, Broome County, N.Y. I will let you both take the witness table and proceed as you wish.

**STATEMENTS OF EDWIN M. ROBBINS, PRESIDENT, MISSISSIPPI ASSOCIATION OF SOIL AND WATER CONSERVATION DISTRICTS, SHANNON, MISS., AND VICTOR VACCARO, FLOOD CONTROL CONTRACT OFFICER, BROOME COUNTY, N.Y.**

Mr. ROBBINS. Mr. Chairman, I am Edwin M. Robbins. In the interest of time, I will summarize my statement I handed in. I have some more information here that I think you would be interested in.

I am president of the State association of the Conservation District Commissioners.

I am very proud of the work this organization is doing and to be associated with our own national organization. I would like to state right now that we don't have any criticism of the treatment that we have had from Congress or any of the national agencies that we have called on for support.

What we think is this bill, S. 1224, would enable us to meet our obligations in a more effective way and even in a more economical

way. Let me start off by saying, in 1973, we had unprecedented rains in the State of Mississippi and in much of the watershed of the Mississippi River.

To give you an example of it, the Corps of Engineers have four flood retention reservoirs in the State of Mississippi. Those four reservoirs were built a number of years ago. They had never been completely full or overflowed the emergency spillways until 1973. But they did overflow then for several weeks, not just days, but weeks.

The river at Vicksburg Gauge reached a height of 53 and one-tenths feet. I understand that that is the highest level since about 1927. At this time in the State of Mississippi, the Corps of Engineers estimated that we had 1,711,000 acres under water.

Much of this land was covered with water from March until July. It became saturated to the extent that when the waters receded, the channel banks sloughed off and caused extensive clogging of the channels.

It also waterlogged the drainage ditches that ran into our channels that we had put in and drainage that we had put in on the 566 watersheds to the extent that there had to be some work done on those structures, too.

It was estimated that there was about \$15 million of damage done from this one series of floods. If you remember, this happened in March, when we had our first floods. We received \$8.2 million as a supplemental appropriation for 216 work.

But we received this money on July 19. By the time we had gotten everything in motion, our designs made and our bids estimated and our contractors had looked over things, and we had received the bids and the work was let, most of that construction year was gone.

We have a little longer construction year than North Dakota and some of the other States. But when December comes, we are about through until April of the next year. Most of that was already gone.

Then too, further damages, we had additional heavy rains in 1974, in the spring, in April, really was when the heaviest came. At that time, we had 1,269,000 acres under water. We hadn't done the repair work from the flood in 1973 so we got much more erosion, from clogging the streams and damage to structures on watersheds.

Then in 1975, we had more heavy rains and higher water than we did in 1974. We had 1,500,570 acres of land under water in 1975. It is our belief if we had this money available as set forth in S. 1224 and could do this work immediately after the damage, that not only would we get better recovery from these floods but we would do it more economically.

Let me give you an example that I have here. In 17 projects over in the delta area, we installed 615 overfall pipes to stabilize the grade of the drainage ditches in 2 channels of the 566 plans.

The total cost of these 17 projects was \$455,651. The engineers estimated an additional cost by having to wait another year in getting those extra rains on it was about \$100,000.

In other words, almost a fourth of the cost of it was caused by delay of having to go back and realine the bottom of those ditches to where we could put in those overfall pipes.

The type projects that we have done in this emergency work we removed debris and sediment from drainage systems. We repaired

flood water retarding structures and emergency spillways. We had several structures that were almost destroyed because of the water going out emergency spillways on these structures, repairing debris basins, repairing drainage degrading problems in the draining systems, stabilized channel banks, putting in overfall pipes, repairing levels that broke, smoothing slit deposit areas in gullies washed into fields where off-site damage was evident.

I might add in three municipalities, we had to do channel bank stabilization work on streams to prevent the streams from cutting into the sewage lagoon structure for those municipalities.

We are very much concerned with this bill because everyone that has a project, damage on his farm as far as he is concerned, that is the most important thing in the world at that time and rightly so.

Mr. Chairman, as the Soil and Water Conservation District Commission, we were involved in reviewing the request for assessment in all applications that were submitted in Mississippi. We are very much pleased with the appropriations that we have received.

We think it has been quite beneficial to the State and to the people that received damage from these unprecedented rains.

But we do feel that with this bill we can do a better job and do it more economically than we can with the present setup.

Mr. Chairman, I appreciate the opportunity of appearing before your committee and testifying for S. 1224.

Senator BURDICK. Thank you for your contribution.

[Mr. Robbins' statement follows:]



OCCURRED OVER THE MISSISSIPPI VALLEY AND CAUSED THE MISSISSIPPI RIVER TO REACH A LEVEL OF 53.1 FEET ON THE GAUGE AT VICKSBURG. THIS CAUSED THE MISSISSIPPI TO BACK UP INTO THE YAZOO RIVER BASIN. WITH THIS HAPPENING AND WITH WATER COMING DOWN FROM THE HEADWATERS OF THE YAZOO BASIN AND OUT OF THE FOUR CORPS OF ENGINEERS RESERVOIRS, APPROXIMATELY 1,711,350 ACRES OF LAND WERE COVERED WITH WATER. SOME OF THIS LAND WAS COVERED WITH WATER FROM MARCH UNTIL JULY. IN THE DELTA AREA OF THE STATE, WHERE THIS WATER STOOD FOR MONTHS, THE SOIL BECAME SATURATED AND AS IT RECEDED THE CHANNEL BANKS SLOUGHED OFF AND GULLIES ERODED BACK INTO FIELDS WHERE WATER CONCENTRATED DURING THE DRAIN OFF. WORKS OF IMPROVEMENT IN WATERSHEDS THROUGHOUT THE UPLAND AREA WERE DAMAGED. THIS WAS ESPECIALLY TRUE IN THE NORTHERN HALF OF THE STATE WHERE THE MOST SEVERE STORMS OCCURRED.

AS A RESULT OF THE DAMAGE THAT OCCURRED, MY INFORMATION IS THAT MORE THAN 200 APPLICATIONS WERE SUBMITTED FROM GROUPS REQUESTING ASSISTANCE TO REPAIR DAMAGED STRUCTURES, TO REMOVE DEBRIS AND SEDIMENT FROM CLOGGED CHANNELS, AND TO STOP ERODING CONDITIONS THAT WERE CREATED BY THE FLOOD. THE TOTAL COST TO REPAIR THE DAMAGE WAS ESTIMATED TO BE MORE THAN \$15,000,000. I UNDERSTAND THAT MISSISSIPPI RECEIVED AN ALLOCATION OF \$8,200,000 FROM THE SUPPLEMENTAL APPROPRIATION THAT WAS PASSED BY THE CONGRESS IN 1973. I ALSO UNDERSTAND THAT THE STATE OFFICE OF THE SOIL CONSERVATION SERVICE WAS ADVISED OF THIS ALLOTMENT ON JULY 19, 1973. THAT WAS MORE THAN FOUR MONTHS AFTER THE STORMS OCCURRED. I'M SURE YOU REALIZE THAT MUCH ADDITIONAL EROSION AND SEDIMENTATION OCCURRED DURING THESE FOUR MONTHS FROM DAMAGED AND EXPOSED

CHANNEL BANKS AND FROM DEGRADING SMALL DRAINAGE DITCHES THAT EXTEND INTO THE CULTIVATED AREA OF THE FLOOD PLAIN.

IN ADDITION TO THE FOUR MONTHS, TIME WAS REQUIRED TO SET THE WORK OF REPAIR IN MOTION. DESIGN PLANS FOR WORK AND CONSTRUCTION HAD TO BE PREPARED AND INVITATIONS TO BID HAD TO BE ISSUED WITH ADEQUATE TIME ALLOWED FOR CONTRACTORS TO LOOK AT THE CONDITIONS BEFORE BIDDING. AS A RESULT OF ALL THIS, MOST OF THE CONSTRUCTION SEASON, A PERIOD OF ABOUT APRIL 15 TO DECEMBER 1, WAS PAST BEFORE MUCH OF THE REPAIR WORK COULD BEGIN. WE NEED THE REVOLVING FUND AS STATED IN SENATE BILL 1224 SO THAT IMMEDIATE STEPS CAN BE TAKEN WHEN AN EMERGENCY DOES OCCUR FROM DISASTERS LIKE THE FLOODS OF MARCH 15-16, 1973.

IN 1974 WE HAD MORE FLOODING FROM ABOVE-AVERAGE RAINFALL AND HIGH INTENSITY RAINS. IN THE COVINGTON COUNTY SWCD, SOUTH OF JACKSON, THE AREA AROUND COLLINS GOT 17-18. INCHES OF RAIN IN APPROXIMATELY 30 HOURS ON APRIL 13-14. IN THE LOWER DELTA AREA ALMOST 300,000 ACRES OF LAND WERE COVERED BY FLOODWATER IN JUNE. (SEE EXHIBIT NO. 1). THE STAGE ON THE MISSISSIPPI RIVER GAUGE IN VICKSBURG REACHED A HIGH OF 45.4. AT THIS STAGE OF THE RIVER, THE U. S. ARMY, CORPS OF ENGINEERS ESTIMATED THAT 1,269,000 ACRES WERE UNDER WATER. AS A RESULT OF THIS ADDITIONAL FLOOD DAMAGE, CONGRESS, AS YOU KNOW, PASSED ANOTHER SUPPLEMENTAL APPROPRIATION. THE SOIL CONSERVATION SERVICE RECEIVED AN ALLOCATION OF THESE FUNDS.

AGAIN IN 1975 WE HAVE RECEIVED ABOVE-AVERAGE RAINFALL AND IN SOME CASES SOME VERY INTENSE RAINS. (SEE EXHIBIT NO. 2). SOME DAMAGE OCCURRED IN 48 COUNTIES AND THE HIGH STAGES ON THE MISSISSIPPI RIVER AT VICKSBURG WERE ONLY

ABOUT 3 FEET BELOW THE HIGH STAGE IN 1973. ABOUT 1,570,000 ACRES WERE UNDER WATER IN THE FLOODED AREAS OF THE YAZOO RIVER BASIN.

IN ORDER TO GIVE YOU A COMPLETE PICTURE ABOUT OUR RAINFALL DURING THE THREE YEARS I HAVE SUMMARIZED SOME DATA FROM THE MISSISSIPPI BOARD OF WATER COMMISSIONERS' PUBLICATION "MISSISSIPPI WATER NEWS". (SEE EXHIBIT NO. 3). THIS INFORMATION IS GIVEN BY AREAS OF THE STATE.

FOR 1973 I'D LIKE TO CALL YOUR ATTENTION TO AMOUNT OF RAINFALL IN MARCH, APRIL AND MAY. THE EXCESSIVE RAINS WERE STATE-WIDE. IN 1974 THE HEAVY RAINS WERE IN JANUARY, APRIL, MAY AND JUNE. YOU CAN VISUALIZE WHAT THESE RAINS DID TO FARMING OPERATIONS AT PLANTING TIME. SINCE MOST OF THE CONSTRUCTION SEASON HAD PAST IN 1973, THE RAINS FURTHER DELAYED REPAIR OF DAMAGE DONE IN 1973 AND CAUSED MORE DAMAGE IN 1974 THAN MIGHT HAVE OCCURRED OTHERWISE. WE NEED THE LATITUDE THAT AN ESTABLISHED FUND WOULD GIVE US IN DEALING WITH THESE DISASTERS.

YOU CAN EASILY SEE THAT WE HAVE HAD SERIOUS FLOODING PROBLEMS FOR THE PAST THREE YEARS. WE HOPE WE DON'T HAVE ANOTHER THREE YEARS LIKE WE HAVE EXPERIENCED FROM MARCH OF 1973 THROUGH THE EARLY SUMMER OF 1975. HOWEVER, MR. CHAIRMAN, SOIL CONSERVATION DISTRICT COMMISSIONERS ARE FACED WITH THESE PROBLEMS AND OTHERS IN PUTTING TOGETHER A SOIL AND WATER CONSERVATION PROGRAM IN THEIR DISTRICTS. WE APPRECIATE WHAT CONGRESS HAS DONE IN FINANCING AND SUPPORTING IN OTHER WAYS OUR EFFORTS TO ADMINISTER A CONSERVATION PROGRAM. WE HAVE ENLISTED THE ASSISTANCE OF MANY FEDERAL AGENCIES. THE SOIL CONSERVATION SERVICE AND THE OTHER FEDERAL AND STATE

AGENCIES HAVE BEEN MOST HELPFUL. WITH THE ADDED TOOL AND SUPPORT OF AN ESTABLISHED FUND AS PROVIDED IN SENATE BILL 1224, WE COULD RESPOND MORE EFFECTIVELY TO EMERGENCY SITUATIONS LIKE THE ONES WE HAVE EXPERIENCED THE PAST THREE YEARS. AS I SAID BEFORE, MOST OF THE CONSTRUCTION SEASON OF 1973 WAS PAST BEFORE WE WERE ABLE TO BEGIN THE EMERGENCY REPAIR WORK. WHILE I DON'T HAVE ANY DOLLAR ESTIMATE ABOUT WHAT THE DELAY MIGHT HAVE COST, I BELIEVE YOU WILL AGREE THAT MUCH ADDITIONAL EROSION AND SEDIMENT DAMAGE DID OCCUR. LET ME GIVE YOU AN EXAMPLE ABOUT SOME COSTS THAT WE DO HAVE. IN THE SWCD'S IN THE DELTA, 615 OVERFALL PIPE WERE INSTALLED IN 17 PROJECTS TO PREVENT FURTHER DAMAGE FROM EROSION OF LATERAL DRAINAGE DITCHES WHERE THEY ENTERED MAIN CHANNELS OF THE DRAINAGE DISTRICTS. THE INSTALLATION OF THESE PIPE COSTS \$455,651. THE DELAY THAT WE EXPERIENCED PROBABLY COST \$100,000 OR MORE ON THIS RELATIVELY SMALL ITEM OF EMERGENCY WORK.

MR. CHAIRMAN, SOIL AND WATER CONSERVATION DISTRICT COMMISSIONERS WERE INVOLVED IN THE REVIEW AND REQUEST FOR ASSISTANCE IN ALL THE APPLICATIONS THAT WERE SUBMITTED. YOU CAN SEE BY EXHIBITS NOS. 4 AND 5 THAT THESE EMERGENCY REPAIR FUNDS WERE OF TREMENDOUS BENEFIT TO ALL OUR PEOPLE AND TO THE SWCD PROGRAM.

WE STRONGLY SUPPORT THE LANGUAGE AND INTENT OF SENATE BILL 1224 AND WE BELIEVE SUCH FUNDING WILL GREATLY ENHANCE OUR ABILITY TO TAKE CARE OF EMERGENCY SITUATIONS.

I APPRECIATE YOUR COMMITTEE PERMITTING ME TO APPEAR BEFORE YOU AND MAKE THIS STATEMENT ON BEHALF OF ALL SWCD COMMISSIONERS IN MISSISSIPPI.

C. B. (BUDDIE) NEWMAN  
SPEAKER PRO TEMPORE  
DISTRICT 15  
P. O. Box 200  
VALLEY PARK, MISSISSIPPI 39177



MISSISSIPPI  
HOUSE OF REPRESENTATIVES

JACKSON

June 26, 1974

COMMITTEE ASSIGNMENTS:  
WAYS AND MEANS, CHAIRMAN  
RULES, SECRETARY, STATE AT LARGE  
APPORTIONMENT AND ELECTIONS  
CONSTITUTION  
INTERSTATE COOPERATION  
PUBLIC UTILITIES  
AGRICULTURAL AND  
INDUSTRIAL BOARD  
COMMISSION ON BUDGET AND  
ACCOUNTING

Governor William L. Waller  
New Capitol  
Jackson, Mississippi

Dear Governor Waller:

The 1974 South Delta Flood Disaster Committee has requested the transmittal of the enclosed report to you for appropriate action with federal and state authorities.

You are aware of the devastating damages to dwellings, farm buildings and public roads caused by the 1973 flood and the economic loss incurred by farmers, farm laborers and other citizens in Issaquena County, Sharkey County, Warren County and other counties in the Delta area of Mississippi.

Many farmers had to refinance after the 1973 flood, and several of these farmers did not have an opportunity to plant one single seed last year.

Several thousand acres of planted crops in the South Delta of Mississippi have been destroyed by the 1974 floodwaters. Excessive rainfall and seep water from the Mississippi River pose serious problems to farmers in this area.

The most urgent need of farmers who have lost their crops as a result of this year's flood is long-term financing at low interest rates. Loans from banks and other private lending institutions will not be available to many capable farmers hard hit by back-to-back floods.

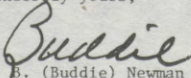
Federal legislation and changes in FHA regulations are needed if hard-working, deserving farmers are to continue their operations.

All FHA disaster loans should bear a 1% interest rate. It is my information this will require an amendment to the Federal Disaster Act of 1974.

Governor William L. Waller  
Page 2

Farmers Home Administration regulations should be changed to permit this agency to make long-term production loans to farmers who farm their own land and to farmers who lease farm lands. Under the existing conditions in the farm disaster areas, it is essential to reduce the equity requirement for farm credit assistance.

Sincerely yours,

  
C. B. (Buddie) Newman

CBN:ma

cc: Senator James O. Eastland  
Senator John Stennis  
Congressman Jamie Whitten  
Congressman G. V. (Sonny) Montgomery  
Congressman David Bowen  
Congressman Thad Cochran  
Congressman Trent Lott

1974 FLOOD DISASTER IN MISSISSIPPI'S  
SOUTH DELTA

1974 South Delta Flood Disaster Committee  
R. D. Rutherford, Chairman

June 26, 1974

## Summary

Floodwaters now covering almost 300,000 acres in Issaquena, Sharkey, Warren, and Yazoo Counties have caused a financial crisis for many farmers. Most of the flooded farmland will be out of production this year, resulting in a crop revenue loss of over 14 million dollars. In addition, many farmers had already planted crops before the flooding began. Their crops were destroyed and their entire investment in planting costs was lost.

The disastrous effect of this year's flood on farmers is due in large measure to the fact that these same farmers suffered the devastation of the 1973 flood. These farmers urgently need refinancing, yet because of last year's flood, they have borrowed to their limits.

To survive this economic crisis, farmers in the flooded areas urgently need:

1. Federal legislation and changes in Farmers Home Administration (FmHA) regulations to permit the issuance of long-term, low-interest loans, including production loans with crop production as security. FmHA disaster loans should bear a 1% interest rate.
2. Extension of the free-use period of mobile homes granted by the U. S. Department of Housing and Urban Development after last year's flood disaster.
3. Unemployment compensation to be paid to farmers and farm laborers forced into unemployment by the flood.
4. Federal grants through The Agricultural Stabilization and Conservation Service (ASCS) to defray the cost of fallow cultivating farmlands that cannot be planted.
5. Food stamps to be distributed to those who will lose their income because of the flood.
6. Funds through ASCS and the Soil Conservation Service to restore farm drainage systems.

FULL REPORT AVAILABLE IF NEEDED

## RAINFALL DATA FOR SPRING 1975

The following rainfall data was taken from the Mississippi Weather Crop Report issued by the Mississippi Crop and Livestock Reporting Service, Jackson, Mississippi.

Week ending May 9, 1975

<u>Location</u>	<u>Amount</u>	<u>Previous 30 days</u>
Stoneville	4.23	9.78
University	2.43	4.70
Canton	4.06	7.77
Crystal Springs	6.24	12.31
Hattiesburg	5.31	10.80

Greatest 24-hour rainfall reported was 5.18 inches at Beaumont on May 8, 1975.

Week ending April 11, 1975

<u>Location</u>	<u>Amount</u>	<u>Previous 30 days</u>
Cleveland	1.23	5.70
University	1.06	6.23
Tupelo	.52	7.18
Vicksburg	1.19	6.29
Poplarville	6.03	11.48

Greatest 24-hour rainfall reported was 4.00 inches at Merrill on April 10.

Week ending March 14, 1975

<u>Location</u>	<u>Amount</u>	<u>Previous 30 days</u>
Holly Springs	6.48	10.56
Tupelo	8.58	11.48
Louisville	8.00	13.33
Stoneville	6.80	10.95

Greatest 24-hour rainfall reported was 7.84 inches on March 13 near Rolling Fork; three-day total was 9.51 inches.

<u>Location</u>	<u>Amount</u>	<u>Previous 30 days</u>
Scott	5.75	9.46
Stoneville	5.70	8.82
Holly Springs	3.19	6.36
Winona	4.19	6.34

Greatest amount reported in 24-hour period was 2.68 inches on February 1 near Arcola for week ending February 7, 1975.

Week ending January 10, 1975

<u>Location</u>	<u>Amount</u>	<u>Previous 30 days</u>
Clarksdale	1.55	7.95
Greenwood	1.26	8.78
Winona	1.08	9.13
Vicksburg	1.56	8.98
Columbia	6.42	8.90
Waynesboro	5.60	9.05

Tylertown received 6.49 inches on January 8 - maximum 24-hour precipitation for the week ending January 10, 1975.

By averaging the amounts listed under "Previous 30 days" and comparing these average amounts to the normal monthly state average, it indicates that actual rainfall received for the first four months of 1975 exceeds the "normal" by about 75 percent.







*The City Of Corinth Mississippi*

JOHN D. MERCIER, MAYOR  
FISHER WATKINS, POLICE CHIEF  
A. LUKE WOOD, CLERK

MUNICIPAL BUILDING



300 CHILDS STREET  
P. O. BOX 352

*Corinth, Mississippi 38834*

ALDERMEN  
GEORGE P. PURVIS  
E. C. HOLLOWAY  
LEON FIELDS  
EDWARD S. BISHOP  
BARRY RICHARDS

September 19, 1975

Mr. Millard Phillips, Chairman  
Alcorn County Soil Conservation District  
Route #5  
Corinth, Mississippi 38834

Dear Mr. Phillips:

I want to take this opportunity to express my appreciation and the appreciation of the city of Corinth for the work the Soil Conservation District did on Bridge Creek under the Emergency Watershed Protection Funds program.

As you know, the City of Corinth must depend on Bridge Creek and Tuscumbia River Canal for nearly one hundred percent of its drainage outlets. For many years we had been unable to make any real improvements to the drainage of the City because there was virtually no outlet at all in Bridge Creek. This condition was further impaired by extensive damage from the spring floods and debris clogging the channels until the City was damaged even more from flood water.

The work the Soil Conservation District did on Bridge Creek in removing debris from the spring floods has saved the City of Corinth a tremendous amount of money and effort in trying to provide drainage and health living conditions for our people.

We appreciate your efforts so much and look forward to continued cooperation in our mutual problems.

Sincerely yours,

CITY OF CORINTH, MISSISSIPPI

*John D. Mercier*  
John D Mercier  
Mayor

JDM:bjs

Senator BURDICK. Mr. Vaccaro?

STATEMENT OF VICTOR VACCARO, FLOOD CONTROL CONTRACT OFFICER, BROOME COUNTY, N.Y.

Mr. VACCARO. Mr. Chairman, members of the committee, I am Victor Vaccaro from Broome County, N.Y. I am the contracting officer. I would like to submit my testimony and summarize it, Mr. Chairman, because of the time element here.

Senator BURDICK. It will be received in full, without objection.

Mr. VACCARO. Mr. Chairman, in Broome County, N.Y., we feel that the Soil Conservation Service and other agencies through Congress and the Senate here have provided us with measures to support the people's flood problems throughout our county.

We, in Broome County, come here in front of your Senate committee to support this bill of S. 1224. We feel it is a good bill. We feel that it has great potential for the taxpayers to protect their property and bridges as in New York and Broome County.

We find one thing wrong which is when we started, just to summarize, we were not sure how much money was available at the time of the flooding throughout Broome County. We were led to believe that it was just a small amount. We only could do about five or maybe four streams.

The taxpayers are very confused with all the damage throughout Broome County. We have 40 streams destroyed, bridges, roads, private property.

We had to take another inventory of these streams and ended up with about 19. We still have the damage occurring in Broome County from that flood. We also had another flood just lately, as you know. We had damage throughout Broome County of \$2.7 million.

As you see, I would like to highly recommend to the committee here to support this bill in the best effort they can make because we in Broome County are really thankful for what we have from you people here in the last flooding. We had \$800,000. It didn't do the complete job. But for that \$800,000, we are very thankful.

I would like to close my statement by saying, with all your agencies, I think you should be very proud of having people in the SCS staff. I heard the statements today against them. I don't believe it, not in our country. I would like to say this again, thank you for letting me come in front of your committee, expressing my opinions.

I hope this will help out in supporting this bill. Thank you, Mr. Chairman.

Senator BURDICK. Thank you very much for your contributions. You made it brief and right to the point. I appreciate it. Thank you very much, both of you gentlemen.

[Mr. Vaccaro's statement with attachments follow:]

STATEMENT OF VICTOR VACCARO  
FLOOD CONTROL CONTRACT OFFICER

BROOME COUNTY, NEW YORK

ON BEHALF OF THE NATIONAL ASSOCIATION OF  
CONSERVATION DISTRICTS

BEFORE THE SUB-COMMITTEE ON WATER RESOURCES OF  
THE U.S. SENATE PUBLIC WORKS COMMITTEE

Mr. Chairman, Members of the Committee:

I am Victor Vaccaro, Contracting Officer for Flood Control Projects in Broome County, New York. I am very highly honored to come before your committee to present testimony in favor of Senate Bill S-1224 and to convey directly Broome County's experience with implementation of the provisions of Section 216 of the Flood Control Act of 1950.

I serve as Land Right Agent and Contracting Officer for Watershed Construction Projects in Broome County. This gives me the opportunity to have close contact with many of the people having flood and erosion problems.

Broome County was devastated by Flood Agnes in June, 1972. We were fortunate to have received \$800,000 under Section 16. These funds were used on 19 different restoration projects, benefiting the residents of our county. Although a greater level of funding could have been used, we were grateful for the amount received.

Through the cooperation of Town Board officials and Highway superintendents, we have been able to allocate funds in an efficient and effective manner. The local official on a number of jobs furnished equipment, men and materials as a local contribution.

Presently, Section 216 authorizes the U.S.D.A. to spend up to \$300,000 annually only to institute necessary repairs to streams as a result of severe rainfall and runoff.

I would like to stress to this committee today, based upon my own personal experience with the development of similar projects within my county, that it would be more effective to establish a system for funding stream repair projects as provided in S-1224. This bill would amend Section 216 of the Flood Control Act of 1950 to enable the county and U.S.D.A. to undertake necessary corrective action to stabilize banks, creeks and streams quickly before we experience future storms causing devastating damage and financial loss. I believe the establishment of such a policy will demonstrate to the residents that the Federal Government is actively and promptly pursuing a forward looking policy for disaster areas.

Should the revolving fund idea be adopted I see the following benefits:

- 1) Recovery and restoration action could be taken more promptly. This would lessen the hardship on people and business.
- 2) The period of recovery would be shortened. This would speed up economic recovery.
- 3) As you realize, until action is taken, additional erosion of the stream banks takes place and silt continues to deposit and pollute water quality. The bill would allow this action to be controlled more quickly.
- 4) We can get more recovery work done for less money thereby saving the taxpayers' dollar.
- 5) We can have a better plan of organization and generally better serve the taxpayer in time of disaster.

I would like to emphasize today to This Honorable Committee, that government does have a responsibility to its taxpayers during emergency situations and times of crisis. The Federal Government has a greater ability to respond to provide emergency assistance. It is my belief that the establishment of such a revolving fund will enable government to exercise its responsibilities in an appropriate manner.

For the record, I am enclosing copies of letters and documents of approval of the Section 216 Flood Control Program which have been received from state, county and other local officials, as well as news items that have been released in connection with this program.

I would like to thank you once again for the opportunity to come before Your Honorable Committee to present my views on this important subject.

VICTOR VACCARO

CONTRACTING OFFICER REPRESENTATIVE

VV gm  
October 3, 1975

D. DUDLEY BURSCH  
316 ROBIN LANE  
VISTAL, NEW YORK 13850

April 27, 1973

Mr. Vic Vaccaro  
Broome County Legislature  
Flood Control  
Broome County Office Building  
Binghamton, N.Y. 13904

Dear Vic,

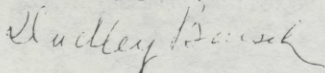
It was a pleasure meeting you at the Chenango Valley State Park last weekend. As you suggested, I am writing about the growing damage and danger of the Willow Run Creek that runs behind my property.

In the past five years, about seventy-five homes with roads and driveways have been built in the watershed that drains into Willow Run Creek. This construction has changed the section of the Creek between Lynnhurst Drive and African Road from a pleasant stream to a dangerous and destructive drainage ditch.

This section of Creek has doubled in width and cut five to ten feet from the properties through which it passes. Properties on the north side of this section rise sharply 25 to 50 feet above the creek. Creek erosion will cause sections of the steep bank with numerous old beautifying trees to collapse into the creek bed.

Since this problem will be made worse at the rate of fifteen new homes per year, I would appreciate your department studying this section of Willow Run Creek for qualification in the channel improvement program.

Very truly yours,



Dudley Bursch

**TOWN BOARD**Supervisor—JOE B. MUNK  
Councilman

D. R. MANKS PERSON

THOMAS E. ELLIS

ROBERT L. BALOGHMAN

NEIL I. GUILTS

**JUSTICE COURT**

Justices

WILLIAM W. CASTLE

HAROLD R. CLARK

Clerk—CAROLE ATWATER

**DEPARTMENTS**

WILLIAM E. D. BARIOW—Town Clerk  
 EARL D. BUTLER—Town Attorney  
 FRANCIS J. CROOM—Police Chief  
 HOWARD A. DAVIS—Assessor  
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 ALLAN R. LYONS—Compt. Finance  
 WILLIAM F. OLIVER—Fire Chief  
 JAMES REID—Engineer  
 LOUIS J. TURK—Permit Officer  
 ORION J. WARFLE—Highway Supt.

TELEPHONE 748-1514  
AREA CODE 607**Town of Vestal**605 VESTAL PARKWAY WEST  
VESTAL, NEW YORK 13850

July 2, 1973

Mr. Henry Stamatel  
 Soil Conservation Service  
 Midtown Plaza  
 Room 400  
 700 E. Water Street  
 Syracuse, New York 13210

Re: Tracy Creek stablization and other creek work in the Town  
 of Vestal

Dear Mr. Stamatel:

I was most pleased to join you during June in the inspection of the Tracy Creek channel stablization done by the Soil Conservation Service. I am enclosing herewith a photocopy from the Thursday, June 21st, 1973, Vestal News of two photographs showing you, Herbert Lyford, Vic Vaccaro and myself inspecting the creek work.

On behalf of the Town Board and the people of the Town of Vestal I wish to extend my most sincere thanks to you for the creek work which you have done in Tracy Creek, Echo Road Creek and in other creeks within the Town of Vestal.

We will also certainly be most grateful for any additional work which the Soil Conservation Service might be able to do in the Town of Vestal, particularly work on Willow Run stream.

Our most sincere thanks again.

Sincerely,

*Joe B. Munk / sew*  
 Joe B. Munk, Supervisor

JBM:sew

cc: Herbert Lyford, Soil Conservation Service, 840 Front St., Binghamton  
 Victor Vaccaro, Broome County Executive's Office, Broome County  
 Office Bldg., Hawley St., Binghamton



## TOWN BOARD

Supervisor JOE B. MUNK  
Councilmen

DR. HERBARD PIERSON  
THEODORE L. LILES  
ROBERT L. PATRIMANI  
MEL J. COLLIS

## JUSTICE COURT

Justices  
WILLIAM W. CASTLE  
HAROLD R. CLARK  
CAROLIE ATWATER

## DEPARTMENTS

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LARRY D. BOHNER Town Attorney  
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DORIS P. DEBEL Tax Receiver  
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ALLAN R. LYONS Compt. Financ.  
WILLIAM L. OLIVER Fire Chief  
JAMES REID Engineer  
LOUIS J. TURK Permit Officer  
ORION J. WARPLE Highway Supt.

TELEPHONE 748-1514  
AREA CODE 607

## Town of Vestal

605 VESTAL PARKWAY WEST  
VESTAL, NEW YORK 13850

September 13, 1973

Mr. Victor Vaccaro  
670 Broome County Executive's Office  
Broome County Office Building  
Dawley Street  
Binghamton, NY 13903

Re: Soil Conservation Service Project on African Road Creek.

Dear Vic:

As you may recall, around July, you, Herb Lyford and a gentleman from the Syracuse office of the Soil Conservation Service expressed to Jim Reid and myself interest in doing a Soil Conservation Service Project on the creek which runs along African Road.

At the meeting of the Vestal Town Board on September 13, 1973 Doctor Holzer spoke requesting that work be done on the creek to protect his property. Jim Reid stated that it was his understanding that a Soil Conservation Service Project was definitely planned in the near future and that it would include the area of the creek along Doctor Holzer's house.

I attempted to reach you by telephone today to inquire regarding this matter, but was advised that you are presently on vacation. After you return, I would appreciate your contacting me regarding the status of the project. Thank you.

Sincerely,

*Joe B. Munk / sew*

Joe B. Munk  
Supervisor

Jbm:rmw  
CC: Doctor Seymour Holzer

723-1831



## TOWN OF FENTON

DONALD J. GRINDER  
SUPERVISOR

FENTON, N. Y.  
14834

November 8, 1973

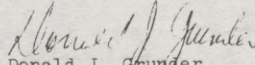
Mr. Victor Vacarro  
Broome County Water Shed Director  
Broome County Office Building  
Binghamton, N. Y.

Dear Gentlemen:

This is meant in the way of congratulations and thank you for an excellent job on both the Ballyhack and Page Brook Creek jobs.

These projects have certainly helped a couple of serious problems in our town and I am sure that I speak on behalf of many residents when I say thank you again.

Sincerely,

  
Donald J. Grunder  
Supervisor

DJG/mr

CC: H. Lyford



THE SENATE  
STATE OF NEW YORK  
ALBANY 12224

HARREN M. ANDERSON  
PRESIDENT PRO TEM  
MAJORITY LEADER

December 20, 1973

Mr. Victor Vaccaro  
3 James Avenue  
Binghamton, New York 13901

Dear Vic:

Catching up on the news by reading the papers since I returned this past weekend from visiting my son in Thailand, I noticed an article announcing your award of a certificate of merit by the Department of Agriculture Soil Conservation Service.

Knowing what we went through, and the problems you encountered and handled so effectively, I want to take this opportunity to offer my personal congratulations. You are more than deserving of this award.

With best wishes for a Happy Holiday, I am

Sincerely,

*Warren*

WMA:kks

C. W. BURDICK

Town Clerk of Colesville  
Phone 693-1174  
HARPURSVILLE, NEW YORK

July 10, 1973

Victor Vaccaro  
Herb Lyford  
County Executive Office  
Broome County Office Bldg  
Hawley Street  
Binghamton, New York

Gentlemen:

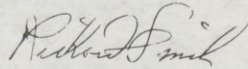
The Town Board of the Town of Colesville wish to compliment you on the work that was just completed on the Belden Creek in the Harpursville area. Not only does <sup>it</sup> protect the adjoining properties, it beautifies the area as you look up and down the stream. It has saved a lot of valuable acreage on the George Gilg property and it should protect any future damage to the Harpursville Central School property.

We know the men had to work under some adverse conditions, such as high water, poor stone for riprap and so forth. But, when it was all finished it is a job well done and when the seeding and the willow trees take hold and grow it should be better yet.

Another thing that the Town of Colesville will appreciate is the protection to the Town bridge abutments, which should save the town dollars in the years to come.

Once again, Thanks for a job well done.

Sincerely,

Richard N. Finch, Supervisor  
Town of Colesville

## VILLAGE OF PORT DICKINSON

VILLAGE HALL, 786 CHENANGO STREET  
 PORT DICKINSON, N. Y.  
 P. O. BINGHAMTON, N. Y. 13901  
 JOSEPH R. KELLEHER, MAYOR



## TRUSTEES

JOSEPH W. BIGART  
 DONALD H. CHANDLER  
 J. HAROLD MCKEE  
 FRANK E. THOMAS, JR.

WALTER J. WELCH  
 CLERK

HADSELL S. PERKINS  
 TREASURER

JOHN M. THOMAS  
 ATTORNEY

November 9, 1973

Mr. Victor Vaccaro  
 Contract Officer  
 Wayne County Flood Control  
 County Office Building  
 Binghamton New York

Dear Vic:

We are pleased to learn that work on relocating Phelps Creek in the area of Kirkwood Avenue and Dickinson Avenue in The Village of Port Dickinson is underway. This was a particularly troublesome area since the overflowing creek was causing damage to private property and leaving stagnant pools as the water receded. Hopefully additional appropriations will permit continuation of the project down to the Chenango Street bridge in the near future. This would also eliminate the extensive erosion that is taking place in this area and eventually allow the development of a park or recreational facility.

Should you have any excess fill material left over from this dredging operation or any other operation in the vicinity, it would be very useful to the village in its park development project in the Wayne Avenue area.

If there is anything that we in the village can do to assist in this project, please don't hesitate to call.

Very Sincerely Yours,

*Joe Kelleher*  
 Joseph R. Kelleher, Mayor  
 Port Dickinson, New York

January 10, 1974

Mr. Joe B. Munk,  
Supervisor  
TOWN OF VESTAL  
605 Vestal Parkway West  
Vestal, New York 13850

Re: Soil Conservation Service Project on African Road  
Creek

Dear Joe:

I have to inform you that the 216 funding for channel improvement throughout Broome County came to an end as of December 31, 1973.

We had several projects that will not be completed now that the funding is exhausted. This was an excellent program throughout the whole county and gave us satisfaction to be able to do.

I know the people on African Road were told that we were going to do the work on African Creek and they will be very disappointed but, as you know to complete a program you need funds.

Maybe some day this program will come back into effect in this area.

Yours very truly,

VICTOR VACCARO  
CONTR OFFCR REPR

VV b

March 21, 1974

Mr. D. Dudley Bursch  
316 Robin Lane  
Vestal, New York 13850

Dear Mr. Bursch:

I am sorry that it has taken me so long to notify you that our program of cleaning out streams in Broome County came to an end in November 1973.

We had all good intentions of doing Willow Run Creek, but the federal people have written this program off.

It was a good program, and if it ever comes back into being we guarantee that we would take care of the problem in your area.

Very truly yours,

VICTOR VACCARO  
CONTR OFFCR REPR

VV b

OFFICE OF TOWN SUPERVISOR  
WINDSOR, NEW YORK 13865

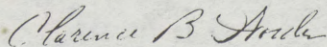
April 25, 1974

Victor Vaccaro  
Governmental Plaza  
Box 1766  
Binghamton, New York 13902

Dear Mr. Vaccaro:

The Town of Windsor would like to thank you personally  
for the work done in the creek channels by the soil conservation.

Sincerely,



Clarence B. Worden  
Supervisor

CBW/bs

**TOWN BOARD**  
Supervisor—JOE B. MUNK  
Councilmen

D. BERNARD PIERSON  
THEOPH L. ELLIS  
NEIL I. QUIRES  
LORING C. BIKLER

**JUSTICE COURT**

Justices  
WILLIAM W. CASTLE  
HAROLD R. CLARK  
1964—CAROLE ATWATER



**DEPARTMENTS**

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EARL D. BUTLER—Town Attorney  
FRANCIS J. CROOM—Police Chief  
HOWARD A. DAVIS—Assessor  
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WILLIAM F. OLIVER—Fire Chief  
JAMES REID—Engineer  
LOUIS J. TURK—Permit Officer  
ORION J. WARFLE—Highway Supt.

TELEPHONE 748-1514  
AREA CODE 607

## Town of Vestal

605 VESTAL PARKWAY WEST  
VESTAL, NEW YORK 13850

July 1, 1974

Mr. Victor Vaccaro  
½ Broome County Executive's Office  
County Office Building  
Governmental Plaza  
Binghamton, New York 13902

Re: Willow Run Creek

Dear Vic:

As you will recall, the County planned to do a project on Willow Run Creek through the Soil Conservation Service, but notified us in late 73 or early 74 that the monies had run out and that there was no funding available.

The residents of the creek came in to discuss the matter with the Town Board on May 22nd. The Board referred it to Jim Reid for his recommendations.

The people also have asked us to explore whether there is any funding of any type which might be available other than funding by the drainage district of the Town of Vestal within which the creek runs.

If you know of any funding from any source which might be available, I would appreciate your advising me. If not, I would appreciate your also advising me that.

I am sending a copy of this memo to Herb Lyford with the same request.

Sincerely,

*Joe B. Munk/sew*

Joe B. Munk  
Supervisor

JBM:sew

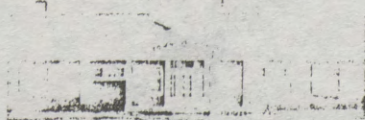
cc: James Reid  
Herbert Lyford



Printed on 100% recycled paper

**TOWN BOARD**  
 Supervisor—JOE B. MUNK  
 Councilman  
 D. RICHARD PETERSON  
 THEODORE L. ELLIS  
 ROBERT G. GIBLIN  
 EDWARD G. BIXLER

**JUSTICE COURT**  
 Justices  
 WILLIAM W. GASTNER  
 HENRY R. CLAYTON  
 CHIEF CLERK—CAROLE ATWATER



**DEPARTMENTS**  
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 ANTHONY J. FIACCO—Recreation Director  
 ALLAN R. LYONS—Comptroller  
 WILLIAM F. OLIVER—Fire Chief  
 JAMES BIRD—Engineer  
 LOUIS F. HURBY—Public Works  
 ORION J. WARKLE—Highway

TELEPHONE 749-1514  
 AREA CODE 607

## Town of Vestal

605 VESTAL PARKWAY WEST  
 VESTAL, NEW YORK 13850

July 1, 1974

Mr. Herbert Lyford  
 District Conservationist  
 U.S. Department of Agriculture  
 Soil Conservation Service  
 840 Front Street  
 Binghamton, New York 13905

Re: Willow Run Creek

Dear Herb:

I am enclosing herewith a self-explanatory letter to Vic Vaccaro inquiring whether there might be any type of funding for Willow Run Creek. I would appreciate your advising me whether there is any funding of any type which might be available.

Thank you.

Sincerely,

*Joe B. Munk/sew*

Joe B. Munk  
 Supervisor

JBM:sew

cc: James Reid ✓  
 Victor Vaccaro ✓



Printed on 100% recycled paper.

Alfred J. Libous  
Mayor

City of Binghamton



New York

13901

Engineering Department  
(607) 772-7007

August 13, 1974

Mr. Victor Vaccaro  
Contract Officer  
Broome County  
Broome County Office Building  
Governmental Complex  
Binghamton, New York

Dear Mr. Vaccaro:

Binghamton City Council is currently considering an Ordinance which would direct the City Engineering Department to prepare plans and specifications for necessary repairs to the concrete walls, concrete channel, and protective fencing of Park Creek from Sherwood Avenue to Vestal Avenue. I have investigated this area and repair work is necessary and maintenance responsibility does lie with the City of Binghamton.

You have been most helpful to the City of Binghamton in the past with stream bank stabilization projects. I wish to thank you again for your help with the channel stabilization of Chamberlain Creek. This letter is in the form of an inquiry to see what assistance, if any, you can offer us on this proposed project. I would be happy to discuss the project with you or visit the site at your convenience.

Very truly yours,

Brian R. Kessler, P.E.  
City Engineer

lac

cc: Mayor Libous  
All members of Binghamton City Council  
File

## UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

3837 West Main Road, Batavia, New York 14020

SUBJECT: WS - 216 - Broome County

DATE: Nov. 13, 1974

TO: Lloyd Wright, DC  
SCS, Binghamton, N.Y.

The following is an account of the operations and maintenance inspection made of 216 work in Broome County several months ago. You may want to contact the Broome County contracting officer, Vic Vaccaro and see what plans they have made for taking care of the necessary maintenance needed.

1. Tracy Creek - Vestal, N.Y. - This job appears to be holding up well. The only problem I found on inspecting was that someone had been removing gravel from underneath the Rt. 17 bridges and resulting storms after that endangered the bridge structure by gouging out the gravel next to the concrete abutments. This practice should be discontinued as soon as possible.
2. Kattell Creek - This job appears to be holding up well. The only problem area is behind Ed McGowan's building, where two of the rocks have moved slightly. Perhaps a backhoe could take care of the needed maintenance here. (Cont'd. on last page).
3. Chamberlain Creek in the City of Binghamton - This job appears to be holding up well. The only problem area appears on the lower section of the job where we put in some rock bars across the stream. At two different locations there are some bars that need watching. At the lower end of the stream where it meets with the Susquehanna River the City should watch the buildup of debris at the outlet end and as soon as it gets near the railroad tracks, they should go in with a backhoe and move the debris. Once the debris builds up underneath the railroad track it is very difficult to get equipment in there and the concrete channel will no longer keep itself clean.
4. Page Brook at Chenango State Park is a job that is holding up very well. The only problem we observed while we were there was a fallen tree, which the State Parks crew was planning to remove the next day.
5. Belden Brook - This job appears to be holding up well.
6. Zimmer Road in the Town of Kirkwood - The town had planned on building a bridge to enlarge the capacity of this stream at the upper end of the job that we did. This had not been done when we checked it but was in the process of being done. The only problem observed is on the lower end of the job where the stream is degrading. It should be looked at again to see if some of the rock should be moved down on the sides of the stream bank to keep it in place.



7. The work on Tuscarora Creek seems to be holding well except for one portion on a sharp curve on the northwest side of the bank where one or two rocks have slipped slightly.
8. ~~Canaan~~ ~~Creek~~ - This is working well except for two sections on the very lower end of the work limits on the sharp curve where the town has rerouted the channel previous to our work. There was some rock movement here. Then on the very upper end of the stream where the channel is relocated by the Soil and Water Conservation District, the channel has degraded and undermined some of the rock that we placed with 216 money. I believe a couple of rock bars placed at this location would solve the problem.
9. Oquaga Creek - Everything appeared to be operating smoothly here. The only thing lacking was we ran out of money before we could put in pool diggers and trout stream improvement structures. Its too bad something could not be done in the future to bring about more trout stream improvement. Perhaps a PL-566 project can do this in the future.
10. Crocker Creek - We did not get to check. This should be checked.
11. Bannta Road Creek - When we checked this it seemed to be holding well and there was one area about midway of the job that looked as though it might need a small amount of maintenance. The town at the time had culverts there to replace the bridge and I assume this has been done by now. They were supposed to put in a big enough bridge to handle the design flow at that point.
12. Brixius Creek - When we checked this it appeared to be working ok except for some problems on the Witherall Street section where we could not get the width of channel and the set back into the properties that we desired. As a consequence, the east bank of the stream had to be steeper than we would have liked. This caused some erosion from the top of the bank. However, the rip-rap at the bottom of the bank is holding well.
13. Ballyhack- When we looked at this, we did not observe any rock movement at all. One of the land owners indicated there had been some and in looking at the job further, we found that there was some work done further up stream by the state and that some of their small size rock had moved downstream.
14. Phelps Creek - in the town of Dickinson and Fenton. This job appears to be holding well from the railroad tracks down. There was some problem with the landowner at the bridge that goes into the religious organization camp and the whole problem stems from the fact that the religious organization does not have enough money to replace the bridge which is really needed and they wanted 216 funds to do this, which, of course, was illegal. Below this section, down in the town of Dickinson, right along the town line, there is a section where the channel is relocated and was not constructed according to plans. There was a tree that should have been taken out but the landowner objected strenuously to this and as a consequence, there was more of a curve put in the channel than should have been.

This section does need some maintenance. I think if it were dozed and reshaped the channel and it was seeded down in the springtime so that it would have a better chance of catching, it might hold. It might also be a possibility that a little more rock along the toe would do a better job.

15. Pierce Creek - the inspection here showed that things were working quite well, except on the lower end of the work limits where there was a buildup of gravel deposits and these should be removed or reshaped in order to keep the streambeds somewhat stabilized. On this stream we only had about half as much money as was needed; in fact, we didn't even have half as much so we only did as much as could be done with existing funds.
16. Trout Brook - This is a channel that was done in mid-winter and we had to go back in and put in some cutoff bars and bedding. This channel should be checked at least every six months or after a heavy storm, because there is a very steep gradient and it is extremely difficult to place a rip-rap under the conditions we were working. It is also a job that I am sure should and will need constant maintenance.

*H. J. Lyford*  
 H. J. Lyford  
 Area Conservationist

CC: D. Shanklin, Syracuse, N.Y.  
 R. Crowe, Binghamton A.O.

Cont'd from Page 1.

Kattell Creek (Cont'd.)

At the time of the inspection we noticed that someone had been taking gravel out of the upstream portion of the section we worked on. There is nothing wrong with taking gravel out of this section if they will do it in a manner that does not endanger the banks, which is what was happening.

Intro. No.	13
Date	1/11/72
Approved by	
Co. Atty.	
Date	1/11/72

**RESOLUTION**  
**BROOME COUNTY LEGISLATURE**  
 BINGHAMTON, NEW YORK

Permanent No. 37  
 Date Adopted: 12/19/72

Page 1 of 2

Introduced by \_\_\_\_\_ AGRICULTURE AND CONSERVATION COMMITTEE

Seconded by \_\_\_\_\_ *N. Shadlock*

RESOLUTION AUTHORIZING NECESSARY APPLICATIONS AND AGREEMENTS  
 FOR SECTION 216 LAW FUNDS FOR FLOOD PREVENTION AND EMERGENCY  
 STREAM REPAIRS.

WHEREAS, in the interest of flood prevention, it appears necessary and desirable that certain streams and water channels in and about the County of Broome be cleaned, cleared and repaired, and

WHEREAS, it is estimated that the program anticipated by the Soil Conservation Service and County officials will cost approximately one half million dollars for such emergency stream repairs, all of which cost of said emergency stream repairs will be 100% reimbursed by Federal funds through the administration of the Soil Conservation Service and appropriate Federal agencies, and

WHEREAS, it is necessary for the County to sponsor such project in order to implement the Section 216 Program, and

WHEREAS, the County's contracting officer requires the authority of this Legislature to arrange to obtain the necessary easements and permits from affected land owners and municipalities in order to institute said program, and

WHEREAS, the acquisition of easements and permits required from land owners shall be subject to the condition that the appropriate Village and Town Boards in the affected villages and towns pass and adopt resolutions to agree to pay the cost for any necessary easement acquisitions, although it is anticipated that most land owners will freely grant such easements in order to insure the improvement and safety of their premises and lands, and

WHEREAS, the sole function and scope of the County's obligation in said emergency stream repair program will be to initially clean and clear stream channels and place and maintain rip-rap where necessary, the cost thereof to be paid by Federal funds, now therefore be it

RESOLVED, that this County Legislature hereby agrees to sponsor the aforesaid Emergency Stream Repair Program in Broome County in order to implement the said Section 216 Program, and be it

FURTHER RESOLVED, that the County Executive or his designee is hereby authorized to execute the necessary applications, agreements, contracts and documents necessary to implement said emergency stream repair program in Broome County under the Section 216 Program, and to execute such other applications, agreements, contracts and documents as he may deem necessary from time to time to implement the intent and purpose of this resolution, and be it

Introduced by \_\_\_\_\_  
Date \_\_\_\_\_  
Approved by \_\_\_\_\_  
w. Atty. \_\_\_\_\_  
Encls. \_\_\_\_\_

RESOLUTION  
BROOME COUNTY LEGISLATURE  
BINGHAMTON, N. Y. YORK

Permanent No. 544  
Date Adopted \_\_\_\_\_  
Page \_\_\_\_\_

Introduced by \_\_\_\_\_  
Seconded by \_\_\_\_\_

FURTHER RESOLVED, that the County of Broome, in conjunction with the Soil Conservation Service, upon approval of the application and the commitment of the necessary Section 216 funds, may proceed to engage in the proposed program of emergency stream repairs to the extent of initially cleaning and clearing the necessary streams and channels and placing and maintaining rip-rap therein and thereon where needed, the cost thereof to be paid by Federal funds, and be it

FURTHER RESOLVED, that Victor Vaccaro, County Contracting Officer, is authorized to approach affected landowners for the purpose of securing the necessary easements and permits for the implementation of the proposed emergency stream repair program, and be it

FURTHER RESOLVED, that the foregoing authorizations are subject to the further condition that the Village and Town Boards of the affected villages and towns within Broome County pass and adopt appropriate resolutions to agree to pay for any easement, access or fee acquisitions required to implement such program, and the County contracting officer is authorized and directed to cooperate with the several affected village and town Boards in connection with the acquisition of such easements, and be it

FURTHER RESOLVED, that the County is authorized to enter into permanent maintenance agreements for and of the rip-rap only if required, on those stream sections where rip-rapping will be done, subject to funding authorization by this County Legislature, and be it

FURTHER RESOLVED, that this resolution shall become effective on January 4, 1973, unless sooner acted upon by the County Executive.

- COUNTY OF BROOME )  
STATE OF NEW YORK ) ss.:

I, the undersigned, Clerk of the County Legislature of the County of Broome, New York, DO HEREBY CERTIFY that I have compared the attached copy of a resolution with the original resolution adopted on the ..1972.. day of ..DECEMBER..... 1972.. by a majority of the members elected to the County Legislature at a regular meeting of said Legislature and said copy is a true copy of said resolution and of the whole thereof.

I FURTHER CERTIFY that at the time said resolution was adopted said Legislature was comprised of ..1972..

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said Legislature this ..1972.. day of ..DECEMBER..... 1972

*Margaret L. ...*  
.....  
County Legislature

Senator BURDICK. I just got a note that Senator Buckley would like to have been here to welcome you today but he was necessarily detained.

Mr. Haas, I believe you have some testimony to offer on another question or further testimony, as you wish.

**STATEMENT OF JOSEPH W. HAAS, DEPUTY ADMINISTRATOR FOR  
WATER RESOURCES, SOIL CONSERVATION SERVICE, U.S. DEPARTMENT  
OF AGRICULTURE**

Mr. HAAS. Mr. Chairman and members of the committee, we are pleased to appear before this committee today with information about nine watershed projects. One of these is the McClellan Creek watershed which was transmitted to the committee in August 1969.

Hearings were held on McClellan Creek watershed as recorded in the committee print titled, "Small Watershed Program—Part 2, July 30, 1970." Interests from Texas and Oklahoma testified concerning water rights implications. No committee action was taken.

The eight new projects are similar to those which you have considered in the past. They serve agricultural communities having significant flood and other water management problems. Local people have demonstrated a strong commitment to these projects by agreeing to provide 15 percent to 63 percent of the costs.

Five of the projects are multiple purpose. The project loans demonstrate the flexibility inherent in Public Law 566 to meet water and land management objectives in upstream watersheds and contribute significantly to rural development.

Environmental statements for these projects have been filed with the Council on Environmental Quality.

I will now give a brief summary of each proposed plan. Members of our staff are here also to help answer questions you may have concerning any of the nine projects. Important features on the display maps will be pointed out during the testimony.

**CANBY CREEK WATERSHED, MINN.**

Canby Creek watershed includes an area of 20,150 acres and is located in west central Minnesota in Lincoln and Yellow Medicine Counties. The city of Canby is located in the downstream portion of the watershed. The city of Marshall is about 30 miles southeast, and Minneapolis and St. Paul are about 160 miles to the east.

The project plan provides for conservation land treatment practices, two floodwater retarding structures, one multiple-purpose reservoir for flood prevention and recreation, and nearly a mile of stream channel stabilization.

These project measures will:

1. Reduce erosion on 7,500 acres of cropland and pastureland.
2. Provide flood protection to 145 businesses and residences in Canby from flood events up to and including the 100-year frequency event.

Senator BURDICK. Mr. Haas, we are going to have to conclude in about 3 minutes. Would you prefer to come back?

Mr. HAAS. I will volunteer, sir, if you wish, to just provide my prepared study and respond to any questions for the record.

Senator BURDICK. Unless you want to come back this afternoon.

Mr. HAAS. This is fine with me.

Senator BURDICK. Without objection, the balance of the statement will remain part of the record as though read.

Mr. HAAS. 3. Reduce flooding on 5,200 acres of flood plain land.

4. Provide an opportunity for approximately 47,800 visitor-days annually of fishing, camping, boating, swimming, and other recreational activities.

The total installation cost of this project is estimated to be \$2.1 million with the local sponsors furnishing about \$637,000, or 30 percent of the total cost. The average annual benefits are estimated to be \$146,500 with a resultant benefit-cost ratio of 1.2:1.

[A joint letter from Senators Humphrey and Mondale and responses to written questions follow:]

HERMAN E. TALMADGE, GA., CHAIRMAN  
 JAMES O. EASTLAND, MISS. ROBERT DOLE, KANS.  
 GEORGE MC GOVERN, S. DAK. MILTON R. YOUNG, N. DAK.  
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 ROBERT H. HUMPHREY, MINN. HENRY BELLMON, OKLA.  
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 DICK CLARK, IOWA  
 RICHARD B. STONE, FLA.  
 PATRICK J. LEAHY, VT.

MICHAEL R. MC LEOD  
 GENERAL COUNSEL AND STAFF DIRECTOR

## United States Senate

COMMITTEE ON  
 AGRICULTURE AND FORESTRY  
 WASHINGTON, D.C. 20510

October 2, 1975

The Honorable Mike Gravel  
 Chairman  
 Subcommittee on Water Resources  
 United States Senate  
 Washington, D. C.

Dear Mr. Chairman:

This is in response to your letter concerning the October 3rd hearing regarding the Canby Creek Watershed Project.

Unfortunately, I will not be able to appear at that hearing. However, I am happy to lend my support and urge that Canby be authorized to proceed with this project.

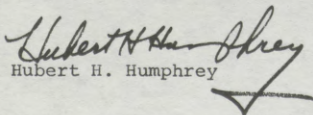
Senator Mondale concurs in this recommendation.

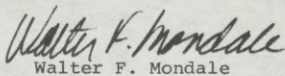
There has been extensive preparatory work over a number of years in developing this project, and an environmental impact statement has been prepared. After detailed review, the people of Canby have decided that the proposed project is the best approach.

This letter confirms the understanding which we have had with Ann Garrabrant of the Subcommittee staff.

With best wishes.

Sincerely yours,

  
 Hubert H. Humphrey

  
 Walter F. Mondale

QUESTIONS PERTAINING TO CANBY CREEK WATERSHED, MINNESOTA

QUESTIONS

Will only one lake in the project be open to the public for recreational use? Why won't the other two lakes be available to public use?

RESPONSE

Yes, only one reservoir (site R-1) will be open to the public for recreational use. The other two sites will be single purpose flood prevention structures with little or no recreation potential. One of these sites (R-6) will be designed with drawdown features to provide a dry dam.

QUESTIONS

Please describe the past record of flooding and flood damages to, (a) businesses and residents in Canby, (b) agricultural land, crops and pasture. How effectively will this project alleviate flooding?

RESPONSE

A severe rainstorm occurred in the watershed on July 26, 1963. Although the areal extent of the storm is not known, 5.2 inches of rain fell in three hours in Canby. This exceeds the 100-year frequency point rainfall for this area. According to the "Canby News," two people were injured (one hospitalized) and several families had to be evacuated from their homes with boats. Highway No. 68 was closed within the city limits where water inundated the highway. Highway No. 75 was inundated for three-fourths of a mile northeast of Canby.

A survey was taken by the city of Canby to determine the monetary losses caused by this flood which are summarized as follows:

City of Canby Municipal Property - - - - -	\$16,650.00
City of Canby Personal Property - - - - -	18,369.10
City of Canby Business Property - - - - -	12,013.70
Railroad Property - - - - -	20,000.00
Farm Property - - - - -	5,550.00
State Property - - - - -	1,700.00
County Property - - - - -	7,620.00
TOTAL	\$81,902.80

Local residents felt that loss of life and much more serious damage were prevented because numerous volunteers assisted in evacuating people and moving property to higher elevations. The average annual damage to the city of Canby is \$31,810.

Average annual crop and pasture damages amount to \$80,870 in and downstream from the watershed area. Flooding will be eliminated within the city of Canby up to the 100-year frequency flood event. Average annual crop and pasture damages and other agricultural damages within the benefited area of the watershed will be reduced by 90 percent with the project. Downstream of the watershed, these damages will be reduced about 18 percent on 4,730 acres.

QUESTION

How much agricultural acreage (cropland and pastureland) would be taken out of production by the project? Would increased productivity on the remaining protected land compensate for the loss of production on land taken out of production?

RESPONSE

There will be approximately 1,020 acres of cropland and pastureland removed from agricultural production by the installation of the structural measures.

Increased productivity and reduction of crop and pasture damages downstream will more than compensate for the loss of production on land taken out of production.

QUESTION

What "indirect" benefits would accrue from the project?

RESPONSE

Indirect damages represent the costs and inconvenience associated with floodwater damages such as interruption of farming operations and

increased travel to markets required when roads and bridges are damaged or destroyed. Lessening these damages provides the "indirect" benefits.

QUESTION

What are the non-agricultural benefits?

RESPONSE

Non-agricultural benefits are those floodwater damage reduction benefits accruing to businesses and other urban properties, residences, roads, and bridges.

QUESTION

How many acres of forest land would be inundated?

RESPONSE

About 72 acres of woods and brushland would be inundated either permanently or periodically by installation of the project.

QUESTION

Are there any flood plain zoning requirements within the city of Canby? Within the total flood plain?

RESPONSE

The Canby City Council is in the process of enacting an ordinance to restrict future development within designated "floodway" limits. There are no such requirements elsewhere in the flood plain.

QUESTION

Is flood insurance available within the flood plain?

RESPONSE

Yes, subsidized flood insurance is available in Yellow Medicine County.

QUESTION

Would the archeological site consisting of earth lodges in Yellow Medicine County be affected by the project, and, if so, what is the position of the Minnesota Historical Society?

RESPONSE

No, the site will not be affected.

QUESTION

Are there any significant land use changes taking place within the watershed or are any projected for the foreseeable future?

RESPONSE

With the exception of the land to be committed to structural measures, we are not aware of significant land use changes taking place in the watershed or projected in the foreseeable future.

## LEONA RIVER WATERSHED, TEX.

Mr. HAAS. The Leona River watershed is located in southwestern Texas, about 85 miles west of San Antonio. The entire project area is within Uvalde County and comprises about 110,000 acres. The city of Uvalde, with an estimated population of 11,000, is located in the center of the watershed.

The proposed project measures consist of soil conservation practices on farms and ranches, four floodwater retarding structures, and about 3.5 miles of channel work. The channel work involves enlargement of existing channels which are ephemeral in nature.

Installation of these project measures will:

1. Reduce sediment and erosion damage to flood plain lands.
2. Provide flood protection to about 380 residential properties and about 30 businesses in Uvalde, as well as 75 farms and ranches in the flood plain.
3. Eliminate, or greatly reduce, hazards to public health from floodwater and contamination.
4. Provide annual recharge to groundwater aquifers of approximately 2,200 acre-feet annually.

The total installation cost of the project is estimated to be \$2.4 million, of which the sponsoring local organizations will furnish \$718,000, or about 30 percent of the total cost. The average annual benefits are estimated to be \$226,200 with a resultant benefit-cost ratio of 2.0:1.

[A statement from Senator Bentsen, a letter from the Governor of Texas, and responses to written questions follow:]

STATEMENT BY SENATOR LLOYD BENTSEN ON THE  
LEONA RIVER WATERSHED PROJECT  
BEFORE THE SENATE COMMITTEE ON PUBLIC WORKS

---

October 3, 1975

Mr. Chairman, the City of Uvalde, Texas was built adjacent to the Leona River and Cook Slough. Either of these water courses has the potential to inflict heavy damages to the residents nearby. Also, several thousand acres of rich irrigated cropland are susceptible to flooding along the Leona River each year.

Constituents from the Nueces-Frio-Sabinal Soil and Water Conservation District, the City of Uvalde, County of Uvalde and the Edwards Underground Water District have studied this flooding problem thoroughly and have concluded that this project is the only feasible solution.

Mr. Chairman, the Leona River Watershed Project will help reduce upland erosion and runoff, reduce waste of irrigation water, and sediment and erosion damage to flood plains. Also, it will provide flood protection to about 380 owners or occupants of residential units and about 30 owners or operators of business units in Uvalde, Texas as well as 75 farms and ranches in the flood plain. Overall, this project will contribute annual benefits of \$226,200 to the local area and provide a total increase in economic activity of about \$19,880 annually.

This project will create a need for six new full-time jobs as a result of increased production and create 67 man-years of employment

for installation of structural measures during the installation period.

Mr. Chairman, projects of this nature are important investments in the future. Not only are they valuable conservation projects that protect life and property for the future, but they create jobs during a time when our countries unemployment rate is continuously rising.

The South Texas area has always faced the problem of a high unemployment rate among its population. Jobs created by the Leona River Watershed Project would be a welcome relief not only to those hired, but to the community as well.

Mr. Chairman, on another note, the Leona River Watershed Project will provide annual re-charge to ground water aquifers of approximately 2,200 acre-feet annually.

Because of the steady decline of the water table in the South Texas area and the growing concern of an end to the underground water supply of the Edwards Aquifer, the annual re-charge that will be provided is a substantial benefit that this project can bring.

Mr. Chairman, I hope the Members of this Committee will agree with me on the need of this project for the South Texas area and look ward it with favor.

## QUESTIONS PERTAINING TO LEONA RIVER WATERSHED, TEXAS

QUESTION

What are the indirect, incidental, and secondary benefits of this project? Are these benefits that are normally subject to local cost sharing, but are relieved of cost sharing because they are not a regular project benefit?

RESPONSE

Indirect benefits involve reduction of identifiable losses resulting from floods, even though direct contact with floodwaters is not involved.

Indirect benefits for this project include reduction or elimination of expenses associated with interruption or delay of travel, rerouting of school buses and mail routes, disruption of farm operations, and business losses. Incidental benefits are those benefits which result from use of water provided by project measures for purposes other than the planned-for primary purpose. For this watershed, incidental benefits result from average annual groundwater recharge being increased from an estimated 5,100 acre-feet to about 7,300 acre-feet. Installation of the floodwater retarding structures will increase the total supply of water available for withdrawal from the Edwards underground water supply by an average of about 2,200 acre-feet annually. Secondary benefits result from increased net returns which accrue in businesses and industries economically associated with the production and utilization of goods and services produced as a direct result of the project. During construction of this proposed project additional requirements for building materials, petroleum products, and other necessities will stimulate the economy. Indirect, incidental, and secondary benefits are a part of the overall project benefits. They are not subject or relative to cost sharing for the structural measures.

QUESTION

What are involved in the "non-agricultural improvements?"

RESPONSE

Reduction in average annual floodwater damages to non-agricultural improvements in this watershed consist almost entirely of reduction in flooding to residential and business properties, streets and utilities, in the City of Uvalde. A small amount of benefits are also derived from reduction of damages to roads and bridges in the watershed.

QUESTION

It is pointed out in your report that floods exceeding the capacity of the proposed project will cause damage. Are the project sponsors aware of this hazard? If so, are they going to take any steps to notify the residents of Uvalde of the hazard?

RESPONSE

The project sponsors are aware that some damages will still occur from storms exceeding the 100-year frequency flood event. The city and county jointly are engaging in an active program to inform all city and county residents of the flood hazards. A map of the 100-year flood plain areas of the total watershed has been published in the local newspaper. A flood prone area map is on permanent display in a conspicuous place in the city hall. Maps contain a caution that larger floods can occur. The city and county will continue periodic newspaper publications of flood hazard maps and information.

QUESTION

If the channelization feature was eliminated, what would be the effect upon the project purpose, costs, and benefits?

RESPONSE

The project purpose would not change. The elimination of channel work would result in failure to meet the project objective of providing a

225

100-year frequency level of protection in the City of Uvalde. The channel work is an interrelated measure with floodwater retarding structures #1 and 2. This interrelated system of measures is necessary to provide a 100-year level of protection to existing properties. Without the channel element, a total of 107 houses and 1 business establishment would still be subject to flooding above the first floor level from a 100-year event.

Elimination of channel work would reduce total project installation cost by about \$683,000 and would also reduce average annual floodwater damage reduction benefits by about \$25,030.

#### QUESTION

In your evaluation, will this project alleviate flood problems downstream within the City of Uvalde proper?

#### RESPONSE

The proposed watershed project will provide flood protection from the 100-year frequency flood event to all existing urban and residential properties. This level of protection is being provided within the entire corporate limits of the City of Uvalde.

#### QUESTION

How far from the project area is the nearest water-based recreation area? Please describe the water-based recreation facilities within the watershed.

#### RESPONSE

Water-based recreation in the watershed and immediate areas is severely limited. Opportunities for fishing in the watershed are restricted to a small lake on the Leona River below Uvalde and a few small ponds that will hold water. These ponds are too small to be used for boating and

related activities. The nearest large scale water-based recreation is Amistad Reservoir which is located on the Rio Grande approximately 80 miles west of Uvalde. Amistad Reservoir offers an abundance of opportunities for year-round water-based recreation.

QUESTION

The report indicates that 11 archeological sites were identified in the localities of the floodwater retarding structures included in the project. What plans do you have to salvage or preserve archeological resources?

RESPONSE

In compliance with Public Law 93-291, the Secretary of the Interior, through the appropriate National Park Archeological Center, will be kept informed of the construction schedule so that the Secretary can initiate whatever salvage or preservation of archeological resources is deemed appropriate.

QUESTION

What proportion of cropland in the watershed would be consumed by the project? Of pastureland? Of rangeland?

RESPONSE

The present land use within the watershed involves cropland, 17,700 acres; pasture and hay land, 3,027 acres; rangeland, 81,746 acres; and miscellaneous, 7,630 acres. The project will commit to other uses 71 acres or 0.4 percent of the cropland, 25 acres or 0.8 percent of the pastureland, and 681 acres or 0.8 percent of the rangeland in the watershed. Another 42 acres of cropland, 15 acres of pastureland, and 1,025 acres of rangeland in temporary flood storage areas can remain in its present use but will be subject to periodic inundation.

QUESTION

Non-agricultural improvements account for 51% of the project benefits. Specifically, what are these benefits that would accrue from the project?

RESPONSE

Floodwater damage reduction benefits to non-agricultural improvements in this watershed consist almost entirely of reduction in flooding to residential and business properties, and streets and utilities in the City of Uvalde. A small amount of benefits are also derived from reduction of damages to roads and bridges in the watershed.

QUESTION

What are the indirect, incidental and secondary benefits?

RESPONSE

Indirect benefits involve reduction of identifiable losses resulting from floods, even though direct contact with floodwaters is not involved. Indirect benefits for this project include reduction or elimination of expenses associated with interruption or delay of travel, rerouting of school buses and mail routes, disruption of farm operations, and business losses. Incidental benefits are those benefits which result from use of water provided by project measures for purposes other than the planned-for primary purpose. For this watershed, incidental benefits result from average annual groundwater recharge being increased from an estimated 5,100 acre-feet to about 7,300 acre-feet. Installation of the floodwater retarding structures will increase the total supply of water available for withdrawal from the Edwards underground water supply by an average of about 2,200 acre-feet annually. Secondary benefits result from increased

net returns which accrue in businesses and industries economically associated with the production and utilization of goods and services produced as a direct result of the project. During construction of this proposed project additional requirements for building materials, petroleum products, and other necessities will stimulate the economy.

#### QUESTION

What is the population size in the flood plain? How many farms are located in the flood plain? How many non-farm residences? What percent of the flood plain is devoted to agriculture? Are there urban areas in the flood prone region?

#### RESPONSE

The estimated population within the flood plain is 1,620.

There are 75 farms or ranches located wholly or partially in the flood plain.

We estimate there are about 400 non-farm residences in the flood plain. No farm or ranch homes are located within the flood plain.

Eighty-seven percent of the total flood plain acreage is devoted exclusively to agricultural production.

A total of 745 acres of the 8,097 acres of flood plain within the watershed is classified as urban lands. The 745 acres are all within or immediately adjacent to the corporate limits of the City of Uvalde.



OFFICE OF THE GOVERNOR  
STATE CAPITOL  
AUSTIN, TEXAS 78711

DOLPH BRISCOE  
GOVERNOR

September 15, 1975

The Honorable Mike Gravel  
United States Senator  
Chairman, Subcommittee on Water Resources  
Senate Public Works Committee  
4202 Dirksen Senate Office Building  
Washington, D. C. 20510

Dear Senator Gravel:

I understand that your subcommittee will consider several USDA soil conservation projects in Texas in hearings next month, including the Red Deer Creek, McClellan Creek, Paluxy River, San Felipe Creek and Leona River Watershed Projects.

I want to let you know of my support for these projects. They would greatly benefit the citizens of Texas by reducing the amount of damage caused by flooding to the state's agricultural land. I would especially like to voice my support for the Leona River project, which has been the subject of very extensive study by the Soil Conservation Service with positive findings of project benefits substantially higher than project costs.

I would deeply appreciate favorable consideration of these projects by your subcommittee, and any actions you may be able to take to assure their timely authorization and funding. This letter of support is respectfully submitted for inclusion in the hearing record.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dolph Briscoe".

DOLPH BRISCOE  
Governor of Texas

DB:pc

## LITTLE LUCKIAMUTE RIVER WATERSHED, OREG.

Mr. HAAS. The Little Luckiamute River watershed with a drainage area of 52,640 acres is located in central Polk County in northwestern Oregon. The city of Falls City is located within the watershed, and Salem, the State capital, is about 15 miles to the east.

The proposed project measures consist of conservation land treatment practices and structural measures consisting of one multiple-purpose reservoir for flood prevention, irrigation, fish and wildlife, recreation, and municipal and industrial water supply; a fish incubator; a division system; and an irrigation water distribution system.

These project measures will:

- (1) Reduce average annual flood damages by about 54 percent.
- (2) Provide an irrigation water supply and distribution system to serve 4,100 acres of land.
- (3) Provide a water supply which will be used to supplement existing supplies for the city of Monmouth, the Little Luckiamute Domestic Water Association Service area and to meet the projected needs of other areas in Polk County.
- (4) Provide water based recreation activities for approximately 210,000 visitor-days annually.
- (5) Create a cold water habitat in the reservoir which will provide a flatwater trout fishery accommodating about 22,000 fisherman-days per year.

The total installation cost of this project is estimated to be \$17.3 million, with the local sponsors furnishing about \$7 million, or 41 percent of the total cost. The average annual benefits are estimated to be \$1.4 million with a resultant benefit-cost ratio of 1.3:1.

[Letters, telegrams and responses to written questions follow:]

MID WILLAMETTE VALLEY RESOURCE CONSERVATION  
AND DEVELOPMENT AREA,  
MARION, POLK AND YAMHILL COUNTIES,  
Salem, Oreg., September 22, 1975.

Senator JENNINGS RANDOLPH,  
*Senate Office Building, Washington, D.C.*

DEAR SIR: The Mid-Willamette Valley RC&D Sponsors have been informed the Little Luckiamute PL 566 Watershed Project is coming before the Senate Committee on Public Works for a hearing on October 3, 1975. The Sponsors would like your assistance in getting this project approved and into construction this year.

The Project is located in Polk County, southwest of Dallas. It is in an area where reservoir type surface water is not readily available. The project entails storage of water for irrigation, recreation, and municipal purposes. The Watershed Plan is compatible with the Mid-Willamette Valley RC&D Project Program and the Polk County Comprehensive Plan and if constructed would provide many man years of employment. In an area of high unemployment. The Sponsors feel this project would be a real adjunct to relief of this area unemployment problems and will appreciate any assistance you can give in getting it approved.

Sincerely,

H. B. HILDEBRAND,  
*President, Mid-Willamette Valley RC&D.*

[Western Union telegram]

Senator MIKE GRAVEL,  
*Capitol One D.C.*

Oppose funding of Army Corp. Luckimute River Project benefits do not justify the cost.

J. MORRIS JOHNSON,  
*Monmouth, Oreg.*

[Western Union telegram]

Senator MIKE GRAVEL,  
*Capitol One D.C.*

Do not fund Army Corp Luckiamute Project it presents another useless desecration at public expense.

L. SPRING,  
*Ivy Ln Monmouth, Oreg.*

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[Western Union telegram]

Senator MIKE GRAVEL,  
*Capitol One D.C.*

Oppose Army Corp Luckiamute Water Control Project, benefits to few people not justifying costs.

DAVID V. MCCORKLE,  
*Monmouth, Oreg.*

## QUESTIONS PERTAINING TO LITTLE LUCKIAMUTE RIVER WATERSHED, OREGON

QUESTION

The size limitation for single structures in PL 566 projects is 25,000 acre-feet in total storage capacity. The summary sheet on Little Luckiamute states that "the total storage capacity of the structure (Teal Creek) is 25,000 acre-feet."

Table 3 on page I-50 of the work plan sets out the structure data for the project. Although the total acre-feet allotted to the various elements of the reservoir are given as 25,000 acre-feet, the sublistings in that category add up to 33,800 acre-feet. If this is correct, the project does not qualify under PL 566.

RESPONSE

Footnotes 2/ and 3/ on the table referred to show that 6,216 acre-feet of irrigation capacity and 2,584 acre-feet of the M&I water supply capacity is in joint use with floodwater retarding capacity. The total capacity complies with PL 566, as indicated.

QUESTION

The city of Monmouth is listed as a sponsor of the work plan. Monmouth is not located in the watershed; how can it be a sponsor.

RESPONSE

It is not necessary that sponsoring local organizations be physically located within the watershed. The city of Monmouth will receive municipal water supply from the project and will participate in financing it.

QUESTION

The city of Falls City, the only urban development in the watershed, is "unalterably opposed" to the project. All of the 21 letters from area citizens which are included in the appendix to the work plan are strongly opposed.

RESPONSE

The quotation indicated is from a letter, with a City of Falls City letterhead, signed by Lladona Kallestad, Secretary pro tem of the Falls City Comprehensive Planning Committee. No official views were received from the

city of Falls City. The stated opposition concern was primarily the impact of the planned recreation development, which is recognized in the environmental statement. Project proponents have indicated that they could, if desired, generate at least comparable response from those in favor of the project.

#### QUESTION

It is stated in the work plan that local secondary benefits will be equal to 10 percent of the increased production costs and 10 percent of the direct primary benefits. However, in table 6 of the addendum the secondary benefits are about 22 percent of the direct primary benefits.

What is the basis for the doubling of the percentage?

(NOTE: Without secondary benefits, two purposes of the project would not be justified, and if they were dropped the project would probably be in jeopardy.)

#### RESPONSE

The percentage was not doubled. The appearance that secondary benefits were based on 22 percent of direct primary benefits arises from the component of secondary benefits which is equal to 10 percent of the increased production costs.

#### QUESTION

I understand the Willamette Basin Comprehensive Study identified a reservoir site on the Luckiamute River which is recommended for early action by the Army Corps of Engineers. What effect would that project have on this one? Would the two projects be competitive in benefits?

#### RESPONSE

Both the Little Luckiamute Watershed project and the proposed Corps of Engineers Pedee Reservoir site were designated in the early action plans by the Comprehensive Study Report. This means that both should be started within the 10 to 15 years after completion of the Report in 1969.

The Corps of Engineers is reported to have held a public hearing concerning the Pedee Reservoir Site in 1974 at which considerable local opposition was expressed. More recently a Corps representative who canvassed local representatives gave the impression that the Corps was considering dropping this site from further consideration.

If the Pedee Reservoir were constructed, it would have no effect on the Little Luckiamute Watershed project, although the two projects would be complementary in flood protection. Both projects would help meet a pressing need for water related recreational developments in the Basin. There would be some initial competition in recreation if both were constructed by 1980.

QUESTION

It has been stated that reservoir drawdown will create a temporary mud flat area each year. Would this be a problem, and if so how serious would it be?

RESPONSE

Withdrawal of water from the joint use capacity will reduce the surface area of the reservoir from 440 acres to 340 acres, or less than 23 percent. The average water depth prior to withdrawal is about 57 feet, while the depth of fluctuation is only about 13 feet. The drawdown area will be shaped for drainage so that access will not be restricted. The only apparent problem would be visual. How serious this would be depends upon the individual viewer, but this is an accepted situation with many western multiple purpose reservoirs.

QUESTION

It has been argued that flooding problems could be resolved without the project. Would you please evaluate this statement?

RESPONSE

The flooding problems could, of course, be solved by other agency or

239

community action, using a variety of structural or nonstructural means. The practicality of such means would depend considerably upon their economic and physical feasibility and the existence of suitable institutional arrangements for carrying them out. All significantly different alternatives for meeting the project purposes which were suggested have been evaluated and the more promising ones are discussed in the alternatives section of the environmental impact statement.

#### QUESTION

Does the planned project propose any channel modification? Please describe any proposed work on natural channels.

#### RESPONSE

The project includes 7,354 feet of concrete lined diversion canal which will create a new channel from the Little Luckiamute River to the Teal Creek Reservoir. The concrete diversion dam on the Little Luckiamute River will be located about 1,000 feet upstream from Falls City. It will divert flood flows to the reservoir during the flood season of October through March and some smaller amounts during April and May. No flow will be diverted from the Little Luckiamute River during June through September. Further details are included on page II-9 of the environmental statement.

#### QUESTION

How much wildlife habitat will be lost and are there plans to mitigate the loss?

#### RESPONSE

Six hundred thirty-seven acres of wildlife habitat for deer, birds, and small animals will be lost due to installation of the reservoir and diversion canal. An additional 258 acres in the recreational facilities area will have its use for wildlife modified by location of facilities and plantings. Four

hundred and forty acres of this area will become habitat for water oriented wildlife. Another 780 acres of brushy wildlife habitat are expected to be converted to cropland as a result of flood prevention and irrigation. Adverse effects have been minimized and no further mitigation is planned.

QUESTION

Are there archeological, historical, or unique scenic resources in the region and if so how will they be affected?

RESPONSE

There are no places of significant archeological or historical value listed in the National Register of Historic Places or otherwise known to be present in the project area. The Little Luckiamute River upstream from Falls City is a very scenic river, though it has been given no special designation as unique. No adverse impacts on such resources are anticipated.

QUESTION

What percent of annual benefits are attributable to irrigation? Do you have assurances that irrigation facilities will be in full demand by farmers?

ANSWER

Twenty-two percent of evaluated annual benefits are attributable to irrigation. The Little Luckiamute Improvement District has informed us that at a 1974 meeting farmers indicated a desire to purchase water to irrigate up to 11,000 acres, whereas, the plan provides only enough water for 4,100 acres.

QUESTION

Would any timberland be lost? What is the present land use of the watershed? How will land use be affected by installation of the project?

RESPONSE

No timberland will be lost due to the project. Present land use in the watershed is 86 percent forest, 11 percent cropland, and 3 percent

miscellaneous uses. Changes as a result of the project are expected to consist of about 703 acres of cropland and 180 acres of forest converted to miscellaneous uses and 780 acres of native grass and shrubby cover classed as forest converted to cropland.

QUESTION

What is your estimate of the agricultural production capacity lost by the project? Will this loss be offset by increased crop yields or productivity?

RESPONSE

Losses of agricultural production will occur on 445 acres of dry cropland; now mostly grain and pasture, and 258 acres of unimproved grasslands. These losses will be more than offset by increased yields and productivity on 780 acres of native grass and shrubby cover converted to irrigated pasture, specialty seed crops, vegetables, strawberries, and mint.

QUESTION

What are the secondary benefits of this project?

RESPONSE

The annual secondary benefits are estimated at \$251,300 consisting of increased net returns which accrue in businesses and industries economically associated with the production and utilization of goods and services produced as a direct result of the project.

QUESTION

Why does project administration cost \$2,600,000 or 15 percent of the project cost?

RESPONSE

Project administration cost items include costs for negotiating and administering architectural or engineering services contracts, review of engineering plans, construction layout, inspection services during

construction, relocation assistance advisory services, and administrative costs of government representatives. Fifteen percent appears relatively high for a watershed project but probably reflects the experience with construction of similar complexity in the area. In any event, the figure is an estimate for the purpose of providing for the necessary services and accounting for their costs in the economic analysis of costs and benefits. There is, and will be, no commitment of such funds to this project unless the costs are actually incurred.

## M'CLELLAN CREEK WATERSHED, TEXAS

Mr. HAAS. This 222,000-acre watershed is located in the Panhandle section of northwest Texas. It is tributary to the North Fork of the Red River.

The watershed includes the Panhandle National Grasslands administered by the U.S. Forest Service. This area was purchased and developed by the Federal Government during the dust bowl era. It includes Lake McClellan, a 325-acre lake which provides needed water-based recreation for residents of the Texas and Oklahoma panhandles. Seven thousand acres of land are irrigated from wells.

The proposed project measures consist of conservation land treatment practices supplemented by 13 floodwater retarding structures to control the runoff from 53 percent of the watershed.

The project will:

- (1) Provide flood protection to 9,400 acres in 75 farm or ranch units.
- (2) Provide benefits to irrigation farmers from additional ground water recharge.
- (3) Reduce sediment deposition on the flood plain by about 68 percent.
- (4) Reduce sediment rates in Lake McClellan by about 50 percent.

The total project installation cost is estimated to be \$3,601,000 of which the local sponsors will furnish about \$1,050,000, or 29 percent of the total cost. The benefits are estimated at \$242,300 annually with a resultant benefit-cost ratio of 1.5:1.

[A statement from Senator Bentsen and responses to written questions follow:]

## STATEMENT OF SENATOR LLOYD BENTSEN

Mr. Chairman, I appreciate your calling this hearing today so that this Subcommittee could consider the several soil conservation Service Watershed projects that are now before us. Five of these projects are located in Texas, McClellan Creek Watershed Project, the Red Deer Watershed Project, Leona River Watershed Project, the San Felipe Creek Watershed Project, and the Paluxy River Watershed Project.

Mr. Chairman, I would like to comment in general on these projects and ask that my written testimony on behalf of each individual project be entered into the record.

Mr. Chairman, each of the Texas projects now before us have several things in common. They each have favorable cost-benefit ratios. They each have been approved by the Office of Management and Budget and the Soil Conservation Service. They each enjoy very strong support in Texas. In most cases, the constituents involved have waited a good many years for the Government to finally make a decision on the merits of the various projects. At least in one case this wait has been over ten years. In the meantime the damage to our soil resources, wildlife resources, and roads and bridges have continued unabated. In looking on how long it takes the Government to move on these projects, I can understand why the average citizen has become so frustrated with the slowness of the American Government.

Mr. Chairman, each of these projects are vitally important to the local area where they are to be located. In my prepared statements on each of the projects, I explain the specific needs and benefits for each project. A review of these statements must state clearly why each of these projects have strong local support.

Projects of this nature are important investments in the future. They are valuable conservation projects that protect life and property for the future. They are sound investments and a reward for sound planning for the future. However, Mr. Chairman, because of today's economic situation, these projects have an additional value: that of creating jobs when our country is suffering from excessive unemployment. Construction jobs are valuable jobs and we recognize

this as an additional, and particularly, important benefit to each of these projects during these economically unstable times.

Mr. Chairman, I want to particularly address myself at this point to the McClellan Creek Watershed Project. This project is of particular importance to Carson, Gray and Donley Counties of Texas and has been under consideration since 1967. The project enjoys very strong support on behalf of the local citizens many of whom were willing to make the journey from Texas to Washington in order to appear in behalf of the project. However, because of the numerous projects this subcommittee must consider today and because of the expense that these private citizens would have to incur for the trip to Washington, I did not ask any of the supporters to appear today. However, as an example of that strong local support I ask unanimous consent that a sample of the many letters that have been mailed to me in support of this project be included in this hearing record. (See p. 184.)

Mr. Chairman, the McClellan Creek Watershed covers over 222,000 acres in Texas and of this amount over 9,000 acres are subject to repeated and damaging flood waters. The objectives of these proposed projects are to provide the needed flood prevention and to install proper land use and conservation practices in the interest of soil, water, and development conservation. The proposed project, by taking the approach of several low-cost earthen dams rather than one large structure, has much merit, I believe, and its merit has never been questioned. The need for this project is obvious. Floods that result in damage occur on the average of more than one per year. Severe damage occurs to hay crops, pastures, fences, farm roads, livestock, bridges, and public roads. Debris is deposited on valuable agricultural lands as well as roads and bridges causing inconvenience and the extra expense of bring the areas back to use.

The average annual direct and indirect damages total over \$82,000, a significant impact on this rural area.

Flooding and sediment deposition has limited the use of much of the fertile subirrigated flood plain land. During the 26 year period from 1940 to 1965 there were 15 major floods. Each inundating more than half of the flood plain. Floods often develop quickly in this area and the rapid runoff from steep escarpment areas cause high velocity flood water which is very destructive to the land and the improvements of the area.

The damages resulting directly from this flooding involve, in addition to those I have already mentioned, restriction of travel, delay in re-routing of school children, and often the isolation of livestock in the area. Much of this area involved is valuable nesting areas for morning dove, bob white, and turkey. Each flood that occurred destroys great numbers of these animals, to the detriment of the overall ecological balance of the region.

Mr. Chairman, the McClellan Creek Project would solve these many and various problems and I would hope that this Committee would review this project on its merits and give it expeditious approval. I would point out, at this point, that the House of Representatives as well as the Office of Management and Budget and the Soil Conservation Service has given approval to this valuable project.

Mr. Chairman, I understand that there has been concern over the possible impact on existing projects located in the lower portion of the Watershed. In the past, this situation was complicated because of the Watershed running across the Texas State line into the State of Oklahoma. During the earlier consideration of this project, it was held hostage because of the conflicts between the States of Oklahoma and Texas in trying to resolve an interstate water compact. Unfortunately, efforts toward the resolution of this compact are now viewed as futile and neither State is actually pursuing a compact. Thus, I can see no reason why we should further delay the McClellan Creek Project.

Mr. Chairman, I also recognize that in the past concern has been voiced by those who are served by the Lake Altus Project in Oklahoma. This concern was mine too, because, being a strong supporter of projects of this nature, I do not want to be a part of denying the citizens of any area of benefits that they can accrue from these type projects. It is for that reason that I requested that the Soil Conservation Service review the Watershed impact of the McClellan Creek Project. After the Service answered my request, I cross checked their figures with the work of the Texas Water Rights Commission for their accuracy.

Mr. Chairman, the study was quite interesting. Of the total contributing area to Lake Altus only 5% is above the proposed impoundments of the McClellan Creek Project. The Soil Conservation Service study further demonstrated that the volume of water impounded in the sediment pools of McClellan Creek Project amounted to only 1.6% of the total down-stream yield of water to Altus. I was

relieved by this figure of 1.6%, Mr. Chairman, and do not believe it to be a significant reduction for the impoundments of Lake Altus.

Mr. Chairman, I'm sure much of the concern of Lake Altus is because the original design of the Altus Project was based on erroneous assumptions of Watershed yields. As a result, it continues to operate at only 75% of its projected capacity. This is regrettable, Mr. Chairman, but I do not feel that the mistake that was made in the construction of one project should jeopardize the significant benefits that can be had from an additional project 100 miles away. Evidently, the State of Oklahoma, as a whole, agrees with this fact since the Timber Creek Watershed Project has also been built above Lake Altus in recent years. Thus, although the shortcomings of Lake Altus are regrettable, it does not stop the State of Oklahoma of approving other projects in the Watershed above the City of Altus. Because of this and because of the minimal impact that McClellan will have on Altus, I must continue my support and ask this Committee to approve the McClellan Creek Project. In doing so I want to be the first to assure the citizens of Altus that I am willing to work with them in any way to improve their project if such an improvement becomes necessary because of the impact of McClellan. I understand that raising the level of the Altus Dam was considered some years ago to prevent the spill-over that occasionally occurs from the dam. Perhaps this is necessary and I will be pleased to help if it is.

Mr. Chairman, realizing the constraints on the Subcommittee's time I will not speak further at this point but rely on the printed statements that I have asked to be inserted in the Record.

Mr. Chairman, a careful review of the merits of these projects have demonstrated to me their importance. It is on these merits that I hope this Subcommittee will set its judgements and approve the Texas projects now under consideration.

Thank you, Mr. Chairman. At this point, I would like to ask permission to insert in the hearing record the testimony of Mr. James A. Luscombe of the Texas Water Rights Commission. His testimony was delivered at an earlier hearing on this project and speaks to the legal considerations of the water between the States of Texas and Oklahoma.

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STATEMENT OF JAMES A. LUSCOMBE, SR., INTERSTATE COMPACT COMMISSION  
COORDINATOR, TEXAS WATER RIGHTS COMMISSION

Mr. LUSCOMBE. Mr. Chairman and Members of the Subcommittee on Flood Control, Rivers and Harbors, of the Public Works Committee of the U.S. Senate, I am James A. Luscombe, Sr., Interstate Compact Commission Coordinator, Texas Water Rights Commission, Austin, Tex.

I am here today speaking in regards to the interests of Texas and the McClellan Creek Watershed Work Plan developed by the U.S. Soil Conservation Service for application to the McClellan Creek Watershed in Carson, Gray, and Donley Counties, Tex.

The State of Texas, and by the way, I wish my testimony to be recorded verbatim, also. The State of Texas appreciates the opportunity to appear here before this subcommittee. However, the State of Texas regrets that it has become necessary to appear before this subcommittee to present a cause which should have been settled before it reached this stage.

For more than fourteen years, Texas and Oklahoma, and by the way, Arkansas and Louisiana, have been working towards a compact on the Red River. The Federal Government is also involved and represented in this compact work. Many projects in both states of Oklahoma and Texas have been developed during this period. Yet this is the first occasion in which a flood water retarding structure has caused such controversy.

We are reluctant to cite instances wherein we feel that errors have been made in evaluation of the McClellan Creek Watershed Project, but we must do so in order to protect the interests of Texas and her citizens in the waters of the Red River, and particularly on McClellan Creek, the tributary to the North Fork of Red River.

Oklahoma and the Bureau of Reclamation maintain that the installation of 13 flood water retarding structures on McClellan Creek in Texas will reduce the flow at state line by as much as 20 percent, and inflow to the Altus Reservoir by as much as 18 to 20 percent, and consequently are requesting the Federal Government to forgive the City of Altus and Altus Irrigation District that por-

tion of the repayment contract by which the McClellan Creek Project might reduce the annual water supply yield in the W. C. Austin Project.

We do not propose to comment on the question of the Federal Government forgiving a portion of the repayment contract. We feel that question is moot by reason of the fact that the McClellan Creek Water Project will have no offset on the W. C. Austin Project.

This last statement is verified by research conducted in Oklahoma by the Oklahoma Water Resources Board, the Soil Conservation Service, and presumably by the Bureau of Reclamation.

If you will look at the map, you will find the Washita River, with headwaters in Texas, and flowing through Oklahoma into Lake Texoma on the Red River. The North Fork rises in Texas, flows through Oklahoma, enters into the Red River, subsequently flows on into Lake Texoma.

Now in an article published in the Soil Conservation magazine, and entered into the June 23, 1970 issue of the Congressional Record, information is given to show that on the Washita River, a tributary of the Red River in Oklahoma, where more than 1,100 flood water retarding structures have been planned, and in excess of 800 flood water retarding structures have already been constructed, the information is given that floods have been reduced, low flows have been augmented, uses for irrigation and industry have increased, and still the same total volume of water remains in the river.

Yet Oklahoma maintains the installation of only 13 such structures in Texas on a watershed adjacent to the Washita, and similar in so many respects as to topography, climate and other physiological characteristics, will materially affect the yield of the W. C. Austin Project.

On March 28, 1938, long before the Altus Dam was constructed and the W. C. Austin Project began operations, the State of Texas issued a permit to the United States of America for use of 5,005 acrefeet capacity reservoir constructed by the Federal Government through the Work Projects Administration. Now Oklahoma maintains in any depletion by this reservoir should be accounted as a depletion by the proposed McClellan Creek Watershed Project and further accounted as a depletion to the W. C. Austin Project. This upper McClellan Creek Reservoir is within the McClellan Watershed Work Plan area.

There are 157 square miles of drainage area above the existing upper McClellan Creek Reservoir currently operated by the U.S. Forest Service. Seventy one square miles of this drainage area is in what we call in Texas the Playa Lake area, and considered non-contributing to any runoff. Two of the proposed flood water retarding structures in the McClellan Creek Watershed Work Plan are up stream from the Upper McClellan Creek Reservoir. The net effect of this is that only the runoff from the 113 square miles of the remaining above the 11 proposed water retarding structures proposed for installation down stream from the upper McClellan Creek Reservoir now this existence could possibly have any effect on the flows at state line.

The drainage area of the North Fork Red River at the Texas-Oklahoma state line is 1,223 square miles. The 113 square miles in the proposed McClellan Creek Watershed Work Plan is only 9.2 percent of the North Fork drainage area in Texas, but Oklahoma maintains that runoff at the state line will be reduced by 20 percent.

The Bureau of Reclamation indicates that the drainage area above Altus Dam is 2,560 square miles, and further indicates that the McClellan Creek Watershed Project would reduce the inflow to Altus Lake by 18 to 20 percent. The Bureau's figures show that 4.4 percent of the drainage area, this 113 square miles above the 11 proposed sites in the McClellan Creek Project, will reduce the flow into Altus Lake even more than this same area will, by Oklahoma's figures, reduce the flow at state line.

In round figures, the average annual flow of the North Fork at state line is 45,000 acrefeet, and into Altus Lake is 110,000 acre-feet. Oklahoma, then, maintains that the McClellan Creek Watershed Work Plan would reduce state line flows by some 9,000 acre-feet per year, whereas the Bureau of Reclamation maintains the project will reduce inflows to Altus Lake by 20,000 to 22,000 acre-feet per year.

We fail to see the rationale of either figure. Because of the operating history of the Altus project, the Bureau of Reclamation is proposing to enlarge the impoundment capacity with hopes of thereby increasing the yield. The staff of the Texas Water Rights Commission has found that the original design of the Altus Dam and Reservoir Project was based on an erroneous assumption of

watershed yield, and further to the total runoff from the total watershed above Altus Dam as available to the project.

In the first instance, the designers estimated the average annual inflow to Lake Altus to be 147,000 acre-feet. The actual average annual inflow to Lake Altus since the construction has been only about 110,000 acre-feet.

In the second instance, there is no basis for anyone assuming that all the runoff from the watershed of the North Fork Red River in Texas will accrue to a project in Oklahoma. Texas does not recognize claims on its waters by any adjacent state, unless such claims are covered by compacts or by court decree.

While the total temporary storage capacity of the 11 structures proposed for flood water retardation below upper McClellan Creek Reservoir is 19,961 acre-feet, the operation of the reservoirs will be such that any temporary impoundments will be evacuated to 1,763 acre-feet as rapidly as possible.

Texas statutes prescribe that no more than 200 acre-feet of water may be impounded for domestic and livestock use without benefit of a permit. Counsel for the Lugert-Altus Irrigation District has just recognized that the rate of such impoundments in a state—he recognized this here today, he further had recognized this in a statement for a public hearing at Lawton, Oklahoma, on December 3, 1969. The water that will be impounded in these proposed flood water retarding structures on the McClellan Creek Watershed will be that water which is impounded in sediment reserve.

It will be on private property, and the anticipated use over and above that for flood water retardation will be for domestic and livestock purposes. No other beneficial uses have been indicated for the project.

We understand that the State of Oklahoma does not have a limitation on impoundment similar to this that I have just outlined for Texas. Therefore, if we refer back to the Washita River, which empties into Lake Tokoma, which Texas has vital interest in, if these more than 800 structures on the Washita River Basin operated as designed, then Oklahoma will maintain a permanent storage capacity of approximately 171,000 acre-feet of water out of the total 759,000 acre-feet designed capacity.

In other words, in Texas, the flood water retarding structures may retain on the average only 8.8 percent of the total design capacity for domestic and livestock uses incidental to flood water retardation, whereas in Oklahoma, the flood water retarding structures may retain on the average 22.5 percent of the total design capacity for domestic and livestock uses and indicated increased uses for irrigation and industry.

Authorizing language for Denison Dam on the main stem of Red River below the North Fork and Washita tributaries, a project which was authorized prior in time to the Altus Project, specifically reserve the right to Texas and to Oklahoma to impound or authorize the retardation or impounding of flood waters for flood control over Denison Dam.

Also, the rate was reserved to the use of waters above Denison Dam for municipal, domestic, irrigation and other beneficial purposes within the boundaries of the respective states. The Denison Dam project predates the Altus Project.

The Oklahoma member to the Engineering Advisory Committee to the Red River Compact Commission is the elected chairman of that committee. We have worked for a long time together. For some time, the Oklahoma member has maintained that an equitable method for apportioning the waters of the river where interstate tributaries above Denison Dam would be on the quote "percentage of flow method," or 60 percent of the flow allocated to the up stream state, and 40 percent of the flow allocated to the down stream state.

Texas is in general agreement to this approach to the division of water of interstate streams in Texas and Oklahoma. Texas is agreeable to accepting her fair share of depletions of the North Fork Red River. We feel that if Texas is to put the release valve at the original channel level on the North Fork, then Oklahoma on the Washita River, in their 1,100 proposed structures, should also put the release valve at the original channel level, and thus operate these projects dry.

However, in the interests of comity between the two states, we suggest the following language for inclusion in the authorization for the McClellan Creek Watershed Work Plan, and also to be used in any future water project on the Red River in either Texas or Oklahoma. This language is as follows:

"This authorization is conditional, resting on the premises that Oklahoma and Texas will account depletions by water projects in either state as a part of that state's apportionment in any compact negotiated in the future for the Red River,

such depletions to be accounted for by methods set forth in the compact so negotiated."

Again, Mr. Chairman, we appreciate the opportunity to give our remarks and views on the McClellan Creek Watershed work plan, together with this proposal for resolution of the current controversy and for guidance of future orderly development of projects so vitally needed in Texas and Oklahoma for flood protection and other beneficial uses.

Thank you very much, sir.

COUNTY OF GRAY,  
Pampa, Tex., September 11, 1975.

HON. LLOYD BENTSEN,  
U.S. Senator, Senate Office Building, Washington, D.C.  
Washington, D.C.

DEAR SENATOR BENTSEN: Mr. Perry Gruhlkey of the Soil Conservation Service office here has advised me that the Public Works Committee of the Senate is scheduled to vote on October 3rd on the McClellan Creek Watershed project and the Red Deer Creek Watershed project.

In behalf of the Commissioners Court of Gray County, Texas, we urge passage of these two important projects.

Yours very truly,

DON CAIN.

Be it remembered, that the Commissioners' Court met in regular session thereof at the Courthouse at Pampa, Texas, on this the 13th day of June, 1975, at 10:00 A.M. with the following officers and members present, to-wit:

Don Cain, County Judge, Presiding  
Joe K. Clarke, Commissioner, Precinct No. 1  
Don Hinton, Commissioner, Precinct No. 2  
James O. McCracken, Commissioner, Precinct No. 3  
Ted Simmons, Commissioner, Precinct No. 4  
Wanda Carter, Clerk of said Court

Court was duly opened and the following proceedings were had, to-wit:

75-119—MOTION MADE BY COM. SIMMONS, SECONDED BY COM. MCCRACKEN

It is hereby resolved by the Commissioners Court of Gray County, Texas, that the United States Secretary of Agriculture declare the Gray County McClellan Creek Watershed Area a Disaster Area, because of the flood and hail storm damage of May 28, 1975, and urge the United States Senate for early approval of the McClellan Creek Watershed Project, which has previously been approved by the United States House of Representatives, with copies of this resolution to be mailed to the following:

The Honorable Dolph Briscoe  
The Honorable John Tower  
The Honorable Lloyd M. Bentsen, Jr.  
The Honorable Jack Hightower, and  
The Honorable Earl Butz.

All Commissioners voted "Aye", None, "Opposed".  
Done this the 13th day of June, 1975, at Pampa, Texas.

DON CAIN,  
County Judge, Gray County, Tex.  
WANDA CARTER,  
Clerk of said Court.

ATTEST

SOIL AND WATER CONSERVATION DISTRICT,  
Pampa, Tex., September 17, 1975.

Senator LLOYD BENTSEN,  
Senate Office Building,  
Washington, D.C.

DEAR SENATOR BENTSEN: Attached is a resolution passed by the Gray County Soil & Water Conservation District Board, September 17, 1975.

Your continued support is always appreciated.

Very truly yours,

TONY R. SMITHERMAN,  
Chairman, Gray County SWCD.

## RESOLUTION

## M'CLELLAN CREEK WATERSHED

Whereas, McClellan Creek in Gray County, Texas has caused intensive damage from flooding throughout the years and the 1975 flood damage on the Creek totaled over one million dollars, and

Whereas, 3,000 acres of prime bottomland, 100 miles of fences, 30 dams, and miles of roads were destroyed by flooding in 1975 on the Creek, and

Whereas, the Texas Highway bridges have been washed out many times over the years and in 1975 \$10,000 in bridge damage and rerouting of traffic for 1 month was caused from McClellan Creek flooding, and

Whereas, landowners along the Creek have a severe burden of loss of income from flood damages and need for repair of destroyed structures and land and loss of livestock, and

Whereas, the needed control of McClellan Creek floodwaters is a Watershed Project, Now, therefore be it

*Resolved by the Gray County Soil and Water Conservation District* in regular meeting at Pampa, Texas on September 17, 1975 that the District is in full support of the McClellan Creek Watershed Project and urges Congress' support of this badly needed project.

TONY R. SMITHERMAN,  
*Chairman.*

CURTIS SCHAFFER,  
*Vice-Chairman.*

ROBERT SAILOR,  
*Secretary.*

MILTON CARPENTER,  
*Member.*

RALPH McLAUGHLIN,  
*Member.*

McLEAN, TEX., July 28, 1975.

HON. JENNINGS RANDOLPH,  
*Senator, Public Works Committee, Washington, D.C.*

DEAR SIR: I hope I am not being a pest, But in regard to the McClellan Creek Water Shed, I have been informed that it needs an environmental impact plan which is being worked out, at present. But will take some time through state offices, this was not required at time the water shed was declared feasible.

Since I am 69 years old and have lived on the banks of this creek or river ever since I was 6 years old I feel I know something about the fish and wild life of this stream. I started trapping possum, and rodents when I was eight (8) years of age. I had wild turkey sent here in 1941, and have possibly the largest wild turkey roost in the panhandle, maybe, in Texas or the United States, some times 500-600.

I have a cousin in Albuquerque, N.M. who started with predatory control when a young man, and worked up to be state supervisor, before retiring, he is two weeks younger than I, so him and I have traveled, over some of New Mexico on trap lines together.

The development of the McClellan Creek Water Shed program will help prevent flooding of quail, turkey, and wild duck nests and other small birds and game, also prevent possible drowning of very young deer. The dams of water will improve watering sites and places for duck and wild geese, also water for more and better fishing. I firmly believe it will help environmental conditions 100 per cent. Thank you for your time.

Yours truly,

MILTON CARPENTER.

JOHNSON LAND & CATTLE Co.,  
*Amarillo, Tex., May 15, 1972.*

Re: McClellan Creek Watershed Authority, Gray County, Texas.

Senator LLOYD BENTSEN,  
*U.S. Senate, The Capitol,  
Washington, D.C.*

DEAR SENATOR: The property owners on and along the McClellan Creek Watershed have contributed considerable time and private money to promote, encourage and enhance the passage of the necessary legislation for this project. Mr. Billy

Davis of Pampa has informed me that you and your staff are completely cognizant of the facts surrounding this project; so there is no need for me to reiterate the background or the present situation.

Senator, we need your best advice and help in getting this project moving. It is vital to many landowners in this area. Our ranch, for instance, has held in abeyance many needed improvements because of the effect the McClellan Creek Project has on our long range planning. All of the interested parties would certainly trust your judgment as to the best procedure to follow, and we would be more than happy to assist your office in any way possible.

Sincerely,

M. T. JOHNSON, JR.,

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SOIL AND WATER CONSERVATION DISTRICT,  
Pampa, Tex., April 22, 1971.

Senator LLOYD M. BENTSON,  
Old Senate Office Building,  
Washington, D.C.

DEAR SENATOR BENTSON: We would like your assistance in getting the McClellan Creek Watershed Application in Carson, Donley, and Gray Counties, Texas through the Senate.

We have had lots of help from Representative Bob Price over the past 4 or 5 years, but it is impossible for him to carry the ball in the Senate.

This is most important in the future for all water related projects for the north part of Texas. The Red River Compact or some similar water division device is essential to the future Texas Water Plan.

Very truly yours.

GRAY COUNTY SOIL AND WATER CONSERVATION DISTRICT BOARD,

CURTIS SCHAEFFER,

*Chairman.*

ROBERT SAILOR,

*Vice Chairman.*

MILTON CARPENTER,

*Secretary.*

SAM BOWERS,

*Member.*

Senator Loyd Benson,  
Washington, D.C.

McLean, Texas.  
Mar 23 1973.

Dear Senator:

In regards to McLellan Creek Watershed Plan which has been shelved in a senate committee for several years (3 or 4). We the undersigned for the following reason would like to see it brought to a hearing, and a vote.

1. The little City of McLean, needs a recreational lake.
2. The City may some day in the near future need the water.
3. The lakes will help local business through fishing, by fishermen coming to lakes.
4. The lakes will help keep bridges, roads, and soil from washing away.

Thank You

Acie Mann	Vernie Anders	Ernest Beck
Bruce Bradford	Betty Nicholas	Mike Johnson
Mrs L. E. Glass	Mrs Virginia Taylor	Mae Baker
Robert Brown	J. L. Williamson	C. J. Keen
W. L. [unclear]	Ladine Hambright	Wm. C. Baker
[unclear]	Jack Kinard	Dorothy Beck
Luden Irvine	Roy Fess	Sonie Masling
Jude Haynes	Marion Hall	Samuel Galston
George Byrd	Robert E. Seam	Mrs. A. J. Glass
Jerry on James	J. P. Glass	Myrtle Kiser
W. J. Robinson	Gayd B. Bybee	E. B. Kiser
W. J. Pittit	Mike Bybee	Mrs. L. J. Kiser
James Baker	James L. Thompson	Patsy Newley
Robert K. Felt	Mary Bybee	Douglas Clauson
	Claude Powell	Louise Clauson
		Cathy Blumer

Bill Headley  
 Suzanne ~~Headley~~  
 Blanche Hardman  
 A. N. Hardman  
 Billie Kingston  
 Aline Kingport  
 Harold Lake  
 John J. Railbock  
 PR. Coast  
 Burt & Nala King  
 J. E. Mahley  
 Casper Smith  
 Don E. Crockett  
 Junstbury  
 Lereene Dwytor  
 Eric Propi  
 Mrs. Harvey Hodgins  
 Jack Walker  
 Leta Bailey  
 Mrs. Eddie Bentley  
 Mrs. Luella Chickerson  
 J. E. Menow  
 Mrs. S. O. Cousins

Mrs. H. E. Dipse  
 Mrs. Helen Johnson  
 C. D. Morgan  
 J. W. Meekour  
 Mayme Hathaway  
 Lunda Dunder  
 Carol Morris  
 Connie Shackelford  
 Jewell Cousins  
 Barbara Brown  
 Ida Lee  
 Mrs. W. C. Kennedy  
 Cheryl Smith  
 L. S. Simms  
 Mrs. Eunice S. Wright  
 John Enright  
 James S. Allison  
 Colleen Stewart  
 LeVerne Brooks  
 Pat Barker  
 Edna Graham  
 Mrs. Jane Mott  
 Carol Allen  
 Ted Blair  
 Ray L. Hainman  
 Mrs. E. J. Shulow, Jr.

Melvin Baker	Jimmy Skelton
Johanne Baker	W. E. Matthews
Willie Dean Estes	Mrs. Jimmy Skelton
Ira Glenn	Billy Sue Moore
J. C. Hepler	Gene D. Simmons
Wilma F. Hepler	Creed Lamb
Sister Bailey	Handa Lamb
Laura Edleman	Bessie Dalton
M. M.	W. T. Cook
Clarence Purce	L. N. Cunningham
J. A. Hess	L. N. Cunningham Jr.
Nell Young	Dale Skelton
Bryan F. Young	Loye Skelton
Thelma Bailey	Jakobson
W. Simpson	May Coleman
	Mrs. L. N. Cunningham
	Rae Simpson
Mrs. Louise Johnson	
A. F. Dyer	Mrs. Gene Simpson
Mrs. James Clett	Gene Lowe
Carl R. Baker	Norma Mc Clary Lowe
Edgar Bailey	Loven Henley
Robert Stubb	Lena Little
Mrs. Lorraine Calate	

M H Clay, Jr.  
 E W Ramsey  
 Helen Ramsey  
 Mrs. J. B. Taylor  
 P. T. Kirtland  
 Pearl Dickinson  
 Herman W. Bell  
 Arthur M. T.  
 J. B. Taylor  
 E. E. B. B. B.  
 Jim McDonald  
 Sandy Mason  
 Fyee Thompson  
 M. H. H.  
 Wm Harkins  
 Jimmy Shelton  
 H. F. H. H.  
 Mrs. H. F. Fabian  
 Londa Harkins  
 Mary H. H.  
 Bob Harkins  
 Bill Adams  
 Grace Bruner  
 Mary Dyer  
 Greta Thompson

Walt Bailey  
 Elsie Glazner  
 R. L. Lawdie  
 Alvin J. Danney  
 Vera F. Back  
 John Biggers  
 Jack Walker  
 W. D. Hideo  
 Mrs. W. D. Hideo  
 R. T. Woods  
 Mrs. Royal Treder  
 Mrs. Roy Mitchell  
 J. H. H.  
 Fred H. H.  
 Vera Darsey  
 Howard Williams  
 Ollie S. Collett  
 M. Cooke  
 Jay Cooke  
 Vernon Turner  
 Mary Turner  
 Everett Darsey  
 J. D. Fish  
 Guy Cubine  
 Anita Harris  
 Paul H. H.  
 Daryl Miller

## QUESTIONS PERTAINING TO McCLELLAN CREEK WATERSHED, TEXAS

QUESTION

How many of the 13 dams will involve recreation? How many have recreational potential? What recreational access can the adjacent landowners be expected to have and use?

RESPONSE

It is expected that six of the structures will have potential for recreation use and will be used for recreation. Public access to the six pools is expected on a fee-charge basis or by free admission with the landowners' permission.

QUESTION

What are the incidental and secondary benefits? What specific items involve cost sharing?

RESPONSE

The incidental benefits consist of \$50,443 for ground water recharge, \$7,607 for recreation, and \$731 for livestock water supply. These incidental benefits are not a planned purpose of the project but are an acknowledged effect of the project.

Secondary benefits consist of those benefits accruing to businesses and industries which do not receive flood protection but do receive increased business activity and income as a direct result of the project.

There are no specific cost items involving cost sharing.

QUESTION

Why are several of the dams closed to public access?

RESPONSE

Access to the dams will be provided to the local sponsors and the Federal Government to inspect the measures and for the local sponsors to operate and maintain the measures.

Public access for recreation purposes is not a purpose of the project and is therefore not required. However, it is expected that landowners will provide public access for incidental recreation to at least six of the structures.

QUESTION

There is a benefit listed of \$1,091 for sediment reduction at Altus Reservoir. Is there a corresponding "cost" attributed to the water that would no longer reach the Altus Reservoir due to this project?

RESPONSE

Yes. This is shown in Table 4 as \$27,837 under "Other Economic Costs" as a reduction of water yields to W.C. Austin Project (Altus Reservoir).

QUESTION

Who specifically are the owners of the land on which the reservoirs will be built, but from which public access will be prevented?

RESPONSE

The owners of the land on which the reservoirs will be built are the farmers and ranchers in the area. The landowners adjacent to the pools will have access to the pools and it is expected that some of them will also provide public access.

QUESTION

Why has no environmental impact been prepared on this project?

RESPONSE

An environmental impact statement was prepared in accordance with guidelines existing when this project was first being considered by Congressional Committees. The environmental statement was filed with the Council on Environmental Quality on August 11, 1970.

QUESTION

Do the residents of Altus, Oklahoma, still oppose this project on the grounds that it will reduce the flow into Altus Reservoir?

RESPONSE

It is our understanding that the Lugert-Altus Irrigation District still opposes this project on the grounds it will reduce the flow into Altus Reservoir.

QUESTION

Why has this project been so fortunate in having such relatively low cost increases, compared to construction costs generally?

RESPONSE

The updating of the costs for this project was not based on national averages but rather on detailed itemized costs for this project. They were based on recent bids for similar work in this same area.

QUESTION

Who is paying for the recreational benefits?

RESPONSE

No one is paying for recreation benefits since no costs are allocated to this purpose. Recreation is expected to occur only as an incidental effect of the project.

QUESTION

This project was considered by the Committee on Public Works in late 1969, but was not approved due to opposition voiced by then Senator Fred Harris on behalf of the residents of Altus, Oklahoma. They claimed that if the project was built as proposed, it would reduce the average annual water yield at Altus Reservoir by 840 acre-feet.

The Committee has received indication that the residents of Altus are unchanged in their attitudes toward the project and its impact on the Altus Reservoir.

Do you agree that McClellan Creek would reduce the water yield at Altus? If so, have you made any attempt since 1969 to work with the State of Oklahoma to resolve this problem?

RESPONSE

An analysis which we made jointly with the Bureau of Reclamation in 1968 shows that the McClellan Creek Watershed project could reduce the Lake Altus yield by about 840 acre-feet initially. This figure would eventually decline to 610 acre-feet as the pools fill with sediment. The Soil Conservation Service has not worked with the State of Oklahoma on this matter because we feel the question of water rights should be resolved by the two concerned states.

QUESTION

The McClellan Creek work plan was transmitted to Congress prior to enactment of the National Environmental Policy Act of 1970, hence there was no environmental impact statement accompanying the report.

Since that time, however, environmental impact statements are required to be submitted in every Federal recommendation or report on proposed actions affecting the environment. Additionally, Rule 13 of the Public Works Committee states that no project proposed by the Administration shall be approved unless the Committee has received an environmental impact statement relative to it.

Why hasn't the SCS prepared an EIS on McClellan Creek in the years since passage of NEPA?

RESPONSE

We prepared an EIS on the proposed McClellan Creek project and transmitted copies to the Council on Environmental Quality on August 11, 1970, in accordance with procedures applicable at that time.

QUESTION

I note that the 1966 cost estimate of \$1.8 million for the proposed structures has been escalated to 1974 dollars, or \$2.5 million.

Why is this increase, which is 38 percent, so much less than the national average increase of 97 percent (figures from Engineering News Record Index) for construction costs for the same time period?

RESPONSE

The increases in costs were based on estimates of the items involved in this particular area and for this particular project, not a national index figure. The figures are based on bids received recently on similar watershed projects in the nearby area.

QUESTION

The benefit-cost ratio for McClellan Creek is 1.5. What interest rate was used in computing this BC ratio?

What would be the benefit-cost ratio under the interest rate of 6 1/8 percent currently being used in formulating water resource development projects.

RESPONSE

The 1.5:1 benefit-cost ratio was based on the 4 5/8 percent interest rate which was applicable when the plan was approved by the Administrator of the Soil Conservation Service in 1969.

At an interest rate of 6 1/8 percent, the benefit-cost ratio would be 1.1:1.

QUESTION

The nonfederal share of the structural measures...lands, easements, and rights-of-way, has not increased at all. It is currently reported at \$328,000, as it was in the 1967 report. How can this be?

RESPONSE

The land rights cost is based primarily on easements taken for flood prevention purposes, not on the purchase of the land. The local sponsors have already obtained over half of the required easements. The estimated value for all easements is believed to be adequate.

QUESTION

I have some questions regarding the incidental benefits credited to the structural measures. First, since the ground water recharge benefit being credited to the dams at sites 1 and 2 is the largest single monetary item of the total benefits (recognizing that the damage reduction benefits are a summation of single items, such as floodwater reduction, sediment reduction and erosion reduction), how can it be called "incidental"? Since it is stated in the report that the ground water supply will be depleted by the year 2000, why isn't ground water recharge acknowledged as an objective of the project? If it were an acknowledged objective, would some form of cost sharing be required, such as that required for the inclusion of municipal and industrial water supply?

RESPONSE

Ground water recharge is regarded as incidental, regardless of the amount, because the project was formulated for flood prevention purposes and no measures or costs are to be incurred for ground water recharge. In other words, the ground water recharge is not a planned purpose but the plan acknowledges the effect the project will have. If structures were planned for the purpose of ground water recharge, cost sharing would be required for the costs allocated to that purpose, depending upon the use to be made of the water as well as this could be determined.

QUESTION

In meeting the forecasted water shortage in the upper or western portion of the watershed, was any alternative considered where the excess ground water in the lower, or eastern, portion of the watershed could be pumped back upstream? It appears that there is sufficient ground water to meet the watershed needs, but it is not in the right place.

RESPONSE

We have not made detailed studies regarding the availability of excess ground water. In fact, there is a question as to whether or not there is any excess ground water in the lower part of the watershed or anywhere else in the Ogallala ground water formulation. McClellan Creek was formulated for flood prevention, not water supply.

QUESTION

The other incidental benefit I would like to discuss is the water based recreation benefits. It is stated in the report that pools of water in six of the small dams will help satisfy a portion of the present recreation needs of the area by providing for fishing, swimming, boating, camping, and picnicking. In addition, it is stated that these pools are expected to be open to the public, but some will be open on a fee-charge basis or by free admission with the landowner's permission.

Two things concern me here. One is that, while benefits are claimed, there is no statement of the cost of recreation facilities or who will be responsible for their construction. Are non-federal interests bearing 50 percent of these costs? And, if the annual recreational benefits are reflected in the benefit-cost analysis, shouldn't the annual costs also appear?

RESPONSE

Costs for any required facilities will be the responsibility of the sponsors or the landowners. No federal cost is involved since recreation is not a purpose of the project. The costs for the recreational facilities are reflected in the benefit-cost analysis by handling such costs as associated costs by subtracting them from gross benefits to obtain net incidental recreational benefits.

QUESTION

The other item that concerns me is that the taxpayers are paying for the construction of these small dams on private lands (easements), and yet cannot use the sites for recreation without either paying a fee or seeking the landowner's permission. It appears that the Federal Government is providing private landowners with personal lakes. I would like to hear your comments on this.

RESPONSE

We acknowledge that private landowners may be able to derive some recreational use from the initial storage of water in the sediment pools in some cases. However, these structures are designed for the purpose of flood prevention and involve no additional costs if the sediment pools initially store water. These pools are designed to trap sediment and are expected to eventually fill with sediment. This incidental recreation use will occur only until the pools fill with sediment. If the landowners were to be denied access to the lakes, additional land rights costs would undoubtedly be incurred by the local sponsors. If recreation were to be added as a project purpose, additional storage and the associated additional costs would be added to assure the recreation use for the entire life of the project.

QUESTION

In 1966, secondary benefits comprised 7.5 percent of the project benefits and were reported at about \$12,000. Secondary benefits are now reported as \$50,100 and comprise about 21 percent of the total benefits. This is an increase of 320 percent.

Could you please explain to us the reasons for this sizeable increase, especially as the total benefits minus the secondary increased only 40 percent.

RESPONSE

Procedures for evaluating secondary benefits have changed since this plan was originally planned. Originally, ten percent of direct primary

benefits was used for estimating secondary benefits. When updating benefits and costs for this project, the procedures used for calculating secondary benefits were those contained in the Water Resources Council's Principles and Standards involving the use of input-output multipliers to determine more accurately the full value of external economies or secondary benefits accruing to the project.

QUESTION

I understand that the total drainage area of Lake Altus, only 7 percent is above the proposed impoundments of the McClellan Creek Watershed. Is that correct?

RESPONSE

That is correct. According to 1973 figures of the Bureau of Reclamation, the total drainage area of Lake Altus is 2,515 square miles. The drainage of the structures in the McClellan Creek Watershed is 185.86 square miles or 7 percent of the total.

QUESTION

What is the percentage impact of McClellan on the flow of water coming into Altus Reservoir?

RESPONSE

The average annual inflow into Lake Altus is estimated to be 110,000 acre-feet. The annual irrigation releases from Lake Altus have averaged about 41,500 acre-feet. It is estimated that the McClellan Creek Watershed will reduce the yield from Lake Altus by no more than 840 acre-feet initially or about 2 percent. This figure would eventually be reduced to 610 acre-feet when the pools are filled with sediment.

QUESTION

I understand that it has been the experience in this part of Texas and Oklahoma that water impoundments in the nature of the McClellan Project improve the underground water supply. Would you comment on this in terms of this project?

RESPONSE

There are many cases where water impoundments improve the underground water supply. The effect is dependent upon the individual case--the geology, topography, etc. In the case of McClellan Creek Watershed, it is estimated that Structures 1 and 2 will cause an additional 186,000 acre-feet of water to enter the Ogallala ground water formation during the 100-year project life.

QUESTION

I understand that the Altus Project has been less than successful in terms of the irrigation source it was meant to be and operates well below its design capacity. Would you agree that if Altus had met its original expectations, there would be no concern over McClellan?

RESPONSE

We would prefer not to speculate about concern for McClellan Creek depending on certain conditions.

The Department of the Interior has stated that in the original planning in the 1930's, it was recognized that Altus Reservoir would not provide a full water supply and there would be serious shortages. They further state that, based on 1962 reservoir conditions for the period 1926 to 1959, the annual water shortages averaged about 21 percent of the consumptive use requirements.

QUESTION

If there is concern over structures affecting the inflow of water to Altus Reservoir, why did the State of Oklahoma approve the construction of the Timber Creek Watershed Project which is also above Altus in the watershed? Does it drain into Lake Altus?

RESPONSE

Timber Creek Watershed, like McClellan Creek Watershed, is in the drainage area of Lake Altus. Construction of project measures in the Timber Creek Watershed was completed on June 30, 1968. The structures of Timber Creek impounded 975 acre-feet of water initially, as compared with 2,168 acre-feet planned for McClellan. The watershed work plan for Timber Creek Watershed was approved by Oklahoma Governor J. Howard Edmondson on June 21, 1960, with reference to four stipulations that would prevent adverse effects on the Altus Reservoir. These four stipulations essentially allowed initial storage of water in the Timber Creek sediment pools only to the extent that it would not conflict with Lake Altus.

QUESTION

Much of the controversy surrounding this project in its earlier consideration was the dispute over the Texas-Oklahoma Water Compact. I understand that is felt that this compact is not forthcoming in the near future. Is this true?

RESPONSE

We have the same understanding.

## PALUXY RIVER WATERSHED, TEX.

Mr. HAAS. The Paluxy River watershed comprises an area of 249,900 acres. The Paluxy River is a tributary of the Brazos River. There are no major towns or urban centers in the watershed. The large metropolitan centers of Fort Worth and Dallas are located about 75 miles to the northeast.

The proposed project measures consist of conservation land treatment practices and structural measures consisting of 23 floodwater retarding structures, two multiple-purpose structures for flood prevention and irrigation, and one multiple-purpose structure for flood prevention and municipal water supply.

These measures will:

One. Reduce erosion and sediment production from the uplands.

Two. Provide a municipal water supply for the city of Glen Rose amounting to about 360,000 gallons of good quality water per day.

Three. Provide an irrigation water supply for about 550 acres.

Four. Create 904 acres of surface water for recreational use, lake fisheries, and waterfowl resting areas.

Five. Provide flood protection to about 125 farms and ranches and about 65 residents and 60 businesses in the city of Glen Rose, which is located about 3 miles downstream from the project on the Paluxy River.

The total project installation cost is estimated to be \$7.1 million, of which the local sponsors will furnish about \$2.9 million, or 41 percent of the total cost. The benefits are estimated at \$427,500 annually. The benefit-cost ratio is 1.7:1.

[A statement from Senator Bentsen and responses to written questions follow:]

STATEMENT BY SENATOR LLOYD BENTSEN ON THE  
PALUXY RIVER WATERSHED PROJECT  
BEFORE THE SENATE COMMITTEE ON PUBLIC WORKS  
OCTOBER 3, 1975

Mr. Chairman, there are few places in the United States left where one can see first hand the track of a dinosaur. Texas is fortunate to have the tracks of at least three species of dinosaurs preserved in the newly created Dinosaur Valley State Park near the Paluxy River. Because of the ever present danger of flooding on the Dinosaur Valley State Park, constituents have asked me for assistance in the approval of the Paluxy River Watershed Project.

The control of flooding in the state park is not the only benefit the Paluxy River Watershed Project carries. Once completed, it will reduce erosion and runoff on agricultural lands, improve soil, water, fish, and wildlife resources, reduce sediment deposition in Lake Whitney, and provide municipal and irrigation water for this area of North Texas.

More important, Mr. Chairman, the Paluxy River Watershed Project will improve economic conditions by increasing income to area residents, increase demands for goods and services, and assist in easing the unemployment situation by creating 165 man-years of employment during construction. Annual benefits alone are estimated to be \$427,500 to both agriculture and non-agriculture enterprise.

Recreational demand in the general vicinity of the project is high because of closeness to the large Dallas-Ft. Worth metropolitan area. The Paluxy River Watershed Project will both increase and improve outdoor recreation for the expanding population of this area.

Mr. Chairman, the strong support of this project by the citizens in Hood, Somervell, and Erath counties have convinced me that this project deserves a favorable vote from this committee. It is viewed on the local basis and I hope by this committee as a wise investment for the future.

Congressman Bob Poage has worked for many years on behalf of this project and has asked me to communicate this strong support for the project.

## QUESTIONS PERTAINING TO PALUXY RIVER WATERSHED, TEXAS

QUESTION

How many recreation dams are involved in this project?

RESPONSE

There are no structures proposed for the purpose of recreation.

QUESTION

What are the non-agricultural improvements?

RESPONSE

Non-agricultural improvements include roads, bridges, urban dwellings and businesses, and improvements or cultural values in the Dinosaur Valley State park.

QUESTION

Where are the non-agricultural improvements located?

RESPONSE

Non-agricultural improvements are located throughout the flood plain in the project area and downstream from the watershed project.

QUESTION

Is the city of Glen Rose in the project area? If no, why not?

RESPONSE

Glen Rose is not in the project area. It is not mandatory that benefited areas be within the project area. The city of Glen Rose will be responsible for the installation of structure No. 26, which is within the project area.

QUESTION

The PL 566 program is not available to watersheds greater than 250,000 acres. I note that the size of the Paluxy River Watershed is 249,900 acres. I also note that just over 50 percent of the floodwater reduction benefits of this project are urban benefits to the city of Glen Rose.

Referring to the map in the back of the watershed work plan, there exists a large shaded area to the extreme southeast of the work-plan area which is designated as "outside of project area." The city of Glen Rose is located well within this shaded area.

If 50.5 of the floodwater reduction benefits of this project are to the city of Glen Rose, how can it possibly be considered "outside the project area?"

RESPONSE

The project area must include the area which encompasses the proposed works of improvement but need not include all beneficiaries or benefited areas. It is not mandatory that a sponsor be within the project area.

QUESTION

In preparing the benefit-cost ratio what weight was given flood protection to the city of Glen Rose? The Dinosaur Valley State Park? Is it correct that no catastrophic flood has occurred at Glen Rose since the city was developed?

RESPONSE

All floodwater damages in and downstream from the watershed were evaluated. Equal weight was given to all damages in that these damages were compared with and without the project. The damage reduction benefit is the difference between the two damage levels.

No catastrophic flood has occurred since the city was developed.

QUESTION

Under non-project conditions, it is estimated the average annual direct monetary damage by floodwater to Dinosaur Valley State Park would be \$22,720. What would be the estimated losses if the interpretive center were constructed outside the flood plain? What is the historical frequency of flooding in the Park area?

RESPONSE

Under without project conditions, the estimated average annual damage to the Dinosaur Valley State Park is \$22,720. Of this amount, \$19,030 would be to the Interpretive Center. The Interpretive Center cannot be relocated outside

of the flood plain and have value for its intended purpose. The dinosaur tracks are located on the edge of the Paluxy River channel. The Interpretive Center will be constructed over the excavated tracks. The Texas Parks and Wildlife Department is currently engaged in detailed planning of the Center.

Under without project conditions, significant damages start at about a 10-year frequency flood event.

#### QUESTION

The report states that the Dinosaur Valley State Park will encompass 1,274 acres, of which 230 acres are within the flood plain. An interpretive complex will be constructed within the flood plain. If there are over 1,000 acres outside the flood plain, why should the interpretive center be constructed on the 230 acres within the flood plain.

#### RESPONSE

The dinosaur tracks are in the flood plain along the river; therefore, to preserve and display the tracks requires the placement of the interpretive complex on the flood plain.

#### QUESTION

Please describe any land treatment measures currently in general practice by landowners.

#### RESPONSE

Land treatment measures currently in general practice include conservation cropping systems, crop residue management, diversions, terraces, waterways, pasture and hayland planting and management, brush control, farm ponds, range seeding, wildlife habitat management, and many others.

#### QUESTION

There are sites within the watershed that are listed in the National

Register of Historic Places. Would any of these be affected by the project? Would any archeological sites be affected?

RESPONSE

There are no known historic sites within the Paluxy River Watershed listed in, or in the process of nomination to, the National Register of Historic Places. Archeologists from the Archeology Research Program, Southern Methodist University made a comprehensive investigation of each of the floodwater retarding structure sites for the Soil Conservation Service and determined that there are no significant archeological resources which would be affected.

QUESTION

Installation of the project will require the use of 4,105 acres of land. Please provide a breakdown of the present land use of this area.

RESPONSE

Construction and operation of the structural measures will require 4,105 acres of land. This commitment by land use is:

<u>Item</u>	<u>Cropland</u> (Acres)	<u>Pastureland</u> (Acres)	<u>Rangeland</u> (Acres)	<u>Intermittent</u> <u>Stream Channels</u> (Acres)	<u>Total</u> (Acres)
Dams & Spillways	36	12	311	--	359
Sediment & Water Supply Pools	119	89	461	235	904
Detention Pools	<u>402</u>	<u>214</u>	<u>1,976</u>	<u>250</u>	<u>2,842</u>
TOTAL	557	315	2,748	485	4,105

QUESTION

Please describe the planned recreation facilities. Are there other water-based recreation sites in the watershed? Please describe. Please describe the recreation demand in the vicinity.

RESPONSE

No recreation facilities are planned as part of the project. The pools of

structures are expected to provide an estimated 15,500 visitor-days of incidental recreation resulting from swimming, camping, fishing, and picnicking by local inhabitants and visitors. Sponsors have given assurance that adequate sanitary facilities meeting state and local health standards will be provided prior to recreational use by the general public.

Lakes Whitney and Granbury, multiple-purpose reservoirs, are located on the Brazos River and provide opportunities for water-based recreation to the area. Outdoor recreation includes some fishing and swimming at accessible spots along the Paluxy River and fishing at some of the privately owned small lakes and ponds. Recreation demand in the general vicinity of the project area is high because of closeness to the large Dallas-Fort Worth metropolitan area and the public interest in the newly created Dinosaur Valley State Park.

#### QUESTION

What secondary benefits will accrue from the project?

#### RESPONSE

Secondary benefits which will accrue as a result of increased income to direct primary beneficiaries include increased purchases from those supplying farm equipment, petroleum products, seeds, feeds, fertilizers, services, and other similar items.

#### QUESTION

When were the cost estimates for this project calculated? Are these estimates still accurate or have some costs increased significantly?

#### RESPONSE

Cost estimates for this project were calculated in 1972. It is estimated that construction costs have risen about 15 percent in the Paluxy River Watershed area since the work plan was prepared. However, with updated costs and benefits, the plan is still economically feasible.

## RABON CREEK WATERSHED, S.C.

Mr. HAAS. The Rabon Creek watershed consists of 85,500 acres in the upper Piedmont region in South Carolina in Laurens and Greenville Counties. The City of Greenville is 20 miles north and the City of Laurens is one-quarter mile east of the watershed. Rabon Creek is a tributary of the Salude River which is in the Santee River Basin.

The planned measures consist of conservation land treatment practices and structural measures consisting of two floodwater retarding structures and one multiple-purpose reservoir with storage capacity for floodwater, municipal water supply, and recreation.

Some of the effects of these planned measures are:

One. Floodwater damages will be reduced on 3,020 acres of flood plain land by approximately 76 percent.

Two. Overbank sediment deposition damages will be reduced by 65 percent.

Three. The water supply will provide a dependable source of water for a projected population of 76,000 people by the year 2000.

Four. About 49,000 annual visitor-days of recreational opportunities will be created.

The total installation cost is estimated at \$3.5 million, of which the local sponsors will provide about \$1.5 million or 42 percent of the total cost. The average annual benefits are estimated to be \$316,800, and the benefit-cost ratio is 1.9:1.

[Responses to written questions follow:]

## QUESTIONS PERTAINING TO RABON CREEK WATERSHED, SOUTH CAROLINA

QUESTION

What are the redevelopment benefits?

RESPONSE

Redevelopment benefits result from the installation, operation, and maintenance of project measures by utilizing unemployed or underdeveloped local labor.

QUESTION

I note that the floodwater retarding structures at sites 20 and 21 would be built on donated easements. Are these restrictive easements? If so, what are the restrictions?

RESPONSE

There would be no known restrictions on the easements of the project. In granting an easement, the landowner gives up certain rights and cannot do anything that would interfere with the normal functioning of the project measures. However, the landowner retains possession of the land.

QUESTION

It is stated in the report that the sediment pool areas of these structures are to be stocked with game fish. Why? Will public access and fishing be allowed in these pools? If so, why isn't recreation identified as a project purpose and a cost-sharing formula applied?

RESPONSE

Stocking of the single purpose floodwater retarding structures will be done to take advantage of the fish habitat which will occur as a result of installation of the structures. These structures will be stocked

with game fish and managed according to recommendations of the South Carolina Wildlife and Marine Resources Commission.

No public access is expected at sites 20 and 21.

#### QUESTION

Construction of the multipurpose reservoir at site 32 will enhance adjoining lands. In particular, it is stated in the work plan that 120 lots will realize a net increase of \$1,000 each on the basis of a desirable water edge or waterfront boundary.

It thus appears that private citizens will be owning land within a Federally built project and realizing a windfall at taxpayers' expense. Do you think it is in the Federal interest to subsidize windfalls such as this?

A solution could be to acquire all project lands in fee purchase, which would also insure total public access to the recreation lake. If this were adopted as a condition of Congressional approval, it would reduce the land enhancement benefits and raise the annual costs. Would this jeopardize the economic viability of the project?

#### RESPONSE

The private citizens will not be owning land within a federally built project. Soil Conservation Service policy is and the work plan shows that the Rabon Creek Watershed Conservation District will purchase sufficient land to protect the lake and to prevent unwise future development. The incidental land enhancement benefits are based on the nearness of the recreation lake but access through this private property is not permitted. The only access to the recreation lake is through the public access areas which are open to all the public.

All necessary land rights for the multiple-purpose structure are provided for in the plan. No other land rights are necessary.

QUESTION

The Army Corps of Engineers states that it is studying the feasibility of a multiple-purpose reservoir on Reedy Fork at Laurens, and that there is a potential conflict with the work plan in the area of recreation and water supply benefits. Have the studies by the Corps of Engineers and the Soil Conservation Service been fully coordinated and do you foresee any potential conflict or duplication? What effect would the Reedy Fork Creek project have on the water supply benefits of the watershed project?

RESPONSE

The Reedy Fork Creek project and Rabon Creek Watershed have been coordinated and there is no conflict. The Reedy Fork Creek project, if implemented, would not affect the water supply benefits of the watershed project.

QUESTION

When estimating the annual benefits of recreation, was full account taken of the fact that there are several large lakes within 60 air miles of the proposed recreation site?

RESPONSE

Full consideration was given to the location of the several large lakes within 60 air miles of site 32. Rabon Creek flows into Lake Greenwood, the nearest of these lakes. The two other nearest large lakes are over 50 miles away and three more are over 60 miles away. The need for a park in the vicinity of Rabon Creek Watershed was identified in the statewide Comprehensive Outdoor Recreation Plan by the South Carolina Department of Parks, Recreation, and Tourism in 1970.

QUESTION

What amount of bottom lands would be inundated in relation to the total amount in the area?

RESPONSE

Approximately 490 acres of bottom land will be inundated by normal pools of the three structures. This represents about 7.7% of the total bottom land in the watershed.

QUESTION

Please describe the redevelopment benefits expected to accrue from the project?

RESPONSE

Redevelopment benefits are the expected result of the utilization of unemployed or underemployed local labor during installation, operation, and maintenance of the project increases.

QUESTION

Under "Recreation Problems," the environmental statement states that water in Rabon Creek is presently classified as unsuitable for contact sports such as swimming and skiing. The statement also indicates that the area is expected to develop commercially and industrially, and that expected urbanization and industrialization will compound future water quality problems. What is the potential for water quality problems within the proposed structures? Are contact water sports included as a project benefit? What recreational development is planned?

RESPONSE

The classification of Rabon Creek is such that future water quality problems are not expected. Water contact sports are not included as a project benefit. Recreation development is included for boating, picnicking, fishing, hiking, etc.

QUESTION

When were the cost estimates used in this report calculated? Have any costs increased significantly or do these figures accurately reflect current costs?

RESPONSE

The cost estimates are based on 1973 prices and are reasonably current.

## RED DEER CREEK WATERSHED, TEX.

Mr. HAAS. Red Deer Creek watershed comprises an area of 212,000 acres. The city of Pampa lies near the headwaters of the Red Deer Creek. The metropolitan center of Amarillo lies about 60 miles west of the project area. Red Deer Creek is a direct tributary of the Canadian River.

The proposed project measures consist of conservation land treatment practices and structural measures consisting of 20 floodwater retarding structures which control about 65 percent of the watershed area.

Installation of the project will:

First. Provide flood protection to 7,960 acres of flood plain land by reducing average annual flooding by 57 percent.

Second. Reduce sediment contributed to the flood plain by 64 percent and reduce volume of sediment delivered to the Canadian River by 50 percent.

Third. Reduce streambank erosion in the flood plain by 74 percent and in the uplands by 29 percent.

Fourth. Improve wildlife habitat in the flood plain area for ground nesting species and fur animals and create water surface area for waterfowl and fishery habitat.

The total project installation cost is estimated to be \$3.4 million, of which the local sponsors will furnish about \$800,000, or 23 percent of the total cost. Benefits are estimated at \$506,500 annually. The benefit-cost ratio is 3.1:1.

[A statement from Senator Bentsen and responses to written questions follow:]

STATEMENT BY SENATOR LLOYD BENTSEN ON THE  
RED DEER CREEK WATERSHED PROJECT  
BEFORE THE SENATE COMMITTEE ON PUBLIC WORKS  
OCTOBER 3, 1975

Mr. Chairman, large floods occurring on an average of about every four years and small floods occurring on an annual basis have brought constituents from three Texas counties, Gray, Roberts, and Hemphill, asking for my help in securing approval for the construction of a watershed project along the Red Deer Creek.

The Roberts County Park located in Miami, Texas, several residences, and business establishments, water lines, natural gas lines, and the city's sewage plant have suffered considerable damage in the past. U. S. Highway 60, an important highway for east-west travel has been blocked numerous times during the past years at a tributary located in the east part of Miami, all because of the unchecked flow of water coming down the Red Deer Creek. This continues to create serious problems for the important agricultural commerce production in the area.

Floodwater and sediment damage occur on about 8,090 acres of flood plain within the watershed and contribute to damages on the Canadian River and the nearby town of Canadian, Texas.

All this can be eliminated by the construction of the Red Deer Creek Project.

However, Mr. Chairman, the basis for this project is the fact the Northern area of Texas is facing a serious problem, that of a shortage of water for irrigation purposes. This watershed project will increase the efficiency and use of irrigation water by providing ground water for waterfowl and fishery resources, improve wildlife habitats on the flood plain and improve the rangelands for the threatened lesser prairie chicken, an endangered species.

The Red Deer Creek Watershed Project will return an annual benefit of \$506,500 and offers a very favorable benefit-cost ration.

The approval of the Red Deer Creek Watershed Project will have an added benefit to the surrounding communities in that it will create new opportunities for employment and income to households. Projects of this nature are important investments in the future, especially during a time when our country is suffering from excessive unemployment.

Mr. Chairman, the Red Deer Creek Watershed Project has strong constituent support throughout the local area. The benefits that will be derived are numerous. I hope the members of this committee will agree with me on the importance of this project and look upon it with favor.

## QUESTIONS PERTAINING TO RED DEER CREEK, TEXAS

QUESTION

How many of the 20 dams will allow public access for recreation purposes?

RESPONSE

The watershed sponsors do not intend to provide public access to any of the dams for recreational uses.

QUESTION

Who will have access to these dams for possible recreation?

RESPONSE

Only the landowners themselves will have access to the structures for recreation. However, the sponsoring local organizations will discourage the landowners from using the water created by the project until sanitary facilities meeting local and state health requirements are met.

QUESTION

What share of project costs will be borne by the Santa Fe Railroad, a major beneficiary?

RESPONSE

So far as we know, the Santa Fe Railroad will not share in any of the project costs unless the sponsoring local organization arranges for the railroad to bear part of the landrights costs.

QUESTIONS

Is it correct that more than half of the flood reduction benefits will accrue to the Atchison, Topeka, and Santa Fe Railway Co. through protection of 6.86 miles of railroad track? What is the estimated cost of relocating the railroad tracks as an alternative to flood protection? What are the annual flood losses to the railroad? Is it correct that the estimated annual monetary benefits to the railroad with the project would be about \$191,000 compared to total annual benefits of the entire project of \$506,500? What proportion of the land in the flood plain is owned by the railroad? What proportion of the land within the watershed is owned by the railroad?

RESPONSE

About 60 percent of the flood damage reduction benefits will accrue to the Atchison, Topeka, and Santa Fe Railroad Company. The estimated cost of relocating the railroad tracks on 6.86 miles as an alternative to flood protection amounts to \$3.2 million. The annual floodwater damages to the railroad amount to \$255,400. They consist of savings in costs of moving the track amounting to \$191,010 annually and damages from track and bridge washout over and above the savings for relocated track amounting to \$64,390. The total estimated average annual monetary benefits to the railroad with the project amount to \$235,400 compared to the total project average annual benefits of \$506,500, or about 46 percent of the benefits. A total of 308 acres or 3.8 percent of the 8,090 acres of flood plain lands are owned by the Atchison, Topeka, and Santa Fe Railroad Company. This involves a total of 12.7 miles of track located within the flood plain. A total of 1,236 acres or 0.5 percent of the 211,840 acres within the watershed are owned by the Atchison, Topeka, and Santa Fe Railroad Company. All railroad owned land within the watershed is solely that required for bed, ballast, track, and directly related facilities. A total of 51 miles of track are located within the watershed.

QUESTIONS

On page 69 of the work plan, I note that about 80 percent of the total floodwater damages in the project area would result to railroad tracks. 83 percent of the damage reduction benefits of the project are attributable to this item.

I note elsewhere in the work plan that the Atchison, Topeka, and Santa Fe Railroad was planning to relocate nearly seven miles of track in the project area, at an estimated cost of \$3.5 million.

If the project is built, it will save the railroad a considerable amount of money...money which it had anticipated spending.

Has any attempt been made to seek participation by the railroad company in the cost of this project? Do you think it a proper function of the federal government to perform services such as this for non-federal interests capable of doing the work themselves?

If the railroad damage reduction benefits were removed from the project, would it still be economically feasible?

RESPONSE

No attempt has been made to seek participation by the Atchison, Topeka, and Santa Fe Railroad Company in the construction cost of this project. The objectives of the sponsoring local organizations in formulating this watershed project were to provide for watershed protection and for flood protection to agricultural lands and the towns of Miami and Canadian. Saving money for relocating railroad tracks was not an objective of the project. The Soil Conservation Service is not legally authorized to accept contributions from local interests toward construction costs for flood prevention. If the railroad damage reduction benefits were deleted from the project, it would still be economically feasible with a 1.7:1 benefit-cost ratio.

QUESTION

Non-federal participation in the structural measures is only about six percent of the total cost. What does this include?

RESPONSE

Non-federal participation in the cost of structural measures includes the costs for land rights and project administration associated with installing the 20 floodwater retarding structures.

QUESTIONS

When were the cost estimates utilized in this report calculated? Have any costs increased significantly or do these figures still accurately reflect current costs?

RESPONSE

Cost estimates for the watershed work plan were based on 1974 prices. These costs still accurately reflect current costs.

QUESTIONS

The report states that among the adverse environmental effects which cannot be avoided would be the destruction of 17 known archeological sites ranging from temporary campsites to large permanent villages. Have studies been undertaken to mitigate the adverse effects? Are there means to preserve these sites and if so at what cost? The report also states that precautionary action will be necessary to prevent damage or destruction of 8 additional archeological sites and one paleontological site. Are such precautions a part of the work plan and do you plan to institute such precautions?

RESPONSE

Investigations by the archeological resource laboratory, Kilgore Research Center, West Texas State University, under the direction of Dr. Jack T. Hughes, indicated that archeological information exists at a number of the planned floodwater retarding structures. A detailed study of all

archeological resources in the watershed is being made but the final report is not yet completed. An interim report was prepared by Dr. Hughes and associates for use in preparation of the work plan and environmental impact statement. Dr. Hughes estimates that about \$40,000 will be needed for an adequate archeological salvage program. In compliance with Public Law 93-291, the Secretary of the Interior, through the Director, Southwest Region, National Park Service, will be kept informed of the construction schedule so the Secretary can initiate whatever salvage or preservation of archeological resources is deemed necessary.

QUESTION

Please elaborate the nonagricultural improvements that account for 49 percent of the total project benefits.

RESPONSE

The total average annual flood reduction benefits to nonagricultural improvements amount to \$249,400 or about 49 percent of the total project benefits. These are made up of reduction in damages to roads and bridges amounting to \$8,800; reduction in damages to railroads amounting to \$235,400; and reduction in damages to urban properties in Miami and Canadian amounting to \$5,200.

QUESTION

What indirect and incidental benefits are expected to accrue from the project:

RESPONSE

Average annual benefits accruing from reduction of indirect floodwater damages amount to \$57,300. These consist of reduction in damages resulting

from interruption of travel, mail service, and freight deliveries, as well as disruption of the livestock feeding and management regime. Incidental benefits for this project amount to \$24,900 and are those benefits which result from use of water provided by project measures for purposes other than the planned-for primary purpose. In this watershed, runoff detained by floodwater retarding structures will seep into and recharge the Ogallala Formation, the primary source of irrigation water used in the immediate area. About 30 irrigated farms are expected to benefit from this recharge. The average annual recoverable volume of this recharge is estimated to be 1,330 acre-feet immediately following installation of the structural measures.

#### QUESTION

What benefits are attributable to irrigation, if any?

#### RESPONSE

There are no planned project measures for irrigation and therefore no benefits were evaluated for that purpose, per se. The incidental groundwater recharge benefits are indirectly attributable to irrigation.

#### QUESTIONS

Please describe the present flood problems in the cities of Miami and Canadian? How much protection would the project provide these cities?

#### RESPONSE

The Roberts County Park in Miami, several residences and business establishments, water lines, natural gas lines, and the city sewage plant have suffered considerable floodwater damage in the past. Canadian has urban properties, primarily residential, located in a low-lying area

subject to flooding. One manufacturing plant producing driller's mud for the oil industry has a large investment in its property in this low lying area. The project, when installed, will eliminate urban damages from these two cities from all flooding up to and including the 100-year frequency flood event.

#### QUESTION

The report states that installation of the project will "increase income to households in the immediate locale by \$86,240 annually." How is this figure derived and how many households are involved?

#### RESPONSE

The \$86,240 is the increase in net income within the regional economy that result from the indirect and induced business activities required for the output of the increased agricultural production generated by the project. The value of this net increase was computed by application of final demand multipliers to the increased output of agricultural commodities.

Multipliers were derived by an adaptation of interdependent coefficients of appropriate agricultural sectors as calculated in "An Inter-industry Analysis of the Texas High Plains, Part 1" which was developed as part of the Texas industry projection, Office of the Governor, Division of Planning Coordination, April 1972.

There are approximately 8,800 households in the 3 county region (Gray, Roberts, and Hemphill) for which the increased net income from indirect and induced economic activities was calculated.

QUESTION

The report states that there is a need for more outdoor recreational facilities, especially water-based recreation, in and near the watershed. Are any recreational benefits expected to accrue from the project, and if so, would you please describe them?

RESPONSE

Recreational benefits are not expected to accrue from this project. None of the floodwater retarding structures will be open to the general public for recreational use.

QUESTION

Are there water supply benefits?

RESPONSE

There are no water supply benefits to be derived from this project.

QUESTION

Please describe any channelization associated with the project.

RESPONSE

The planned project measures for this project consist of soil conservation practices on farms and ranches and structural measures consisting of 20 floodwater retarding structures. There is no channel work associated with the project.

## SAN FELIPE CREEK WATERSHED, TEX.

Mr. HAAS. San Felipe Creek Watershed contains an area of 30,100 acres and is located within the Rio Grande River Basin Region. The watershed is approximately 150 miles west of San Antonio. San Felipe Creek rises in southeastern Val Verde County and flows southward to its confluence with the Rio Grande.

The planned measures consist of conservation land treatment practices on farms and ranches and the installation of one floodwater retarding structure.

Some of the more important effects from installation of project measures are:

First. Erosion and sediment will be reduced by application of land treatment measures.

Second. Floodwater damages will be reduced about 99 percent from all flood events up to and including the 100-year frequency event.

Third. Flood damage reduction in flood-prone agricultural areas will insure more dependable crop yields and help stabilize the agricultural sector of the local economy.

Fourth. Public Health and sanitation facilities and conditions will improve in the presently flood-prone areas of Del Rio.

The total installation cost is estimated at \$575,000 of which the local sponsors will provide \$87,000 or about 15 percent of the total cost. The average annual benefits are estimated to be \$198,100, with a resultant benefit-cost ratio of 6.6:1.

[A statement from Senator Bentsen and responses to written questions follow:]

STATEMENT BY SENATOR LLOYD BENTSEN ON THE  
SAN FELIPE CREEK WATERSHED PROJECT  
BEFORE THE SENATE COMMITTEE ON PUBLIC WORKS

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October 3, 1975

Mr. Chairman, the San Felipe Creek Watershed Project is a plan for watershed protection and flood prevention in Val Verde County, Texas and will be carried out by three sponsoring local organizations, the Devils River Soil and Water Conservation District, Val Verde County Commissioners Court, and the City of Del Rio with assistance from the Soil Conservation Service and the United States Department of Agriculture.

The San Felipe Creek Watershed Project proposes that adequate land treatment be accomplished on about 2,520 additional acres and that a single-purpose floodwater retarding structure with a storage capacity of 5,967 acre-feet of water be constructed during a three year installation period.

This area of my State, Mr. Chairman, is sorely in need of this project. Once completed, this project will carry annual benefits of \$198,100 to both agricultural and non-agricultural areas. Floodwater damages will be reduced by at least 99.5 percent from all flood events up to and including the 100 year frequency event. Property owners will be provided the opportunity to improve their homes without fear of increased flood damages. The City of Del Rio will have the opportunity to improve and

intensify public recreational facilities in its public park, thus improving civic pride and human environment.

Mr. Chairman, in the past the San Felipe Creek has had a history of extensive flood damage to residential and business properties, city streets, public recreational facilities, and utilities in Del Rio and to agricultural properties along its path. It has been estimated that the benefit-cost ratio of this project will be an impressive 6.6 to 1.

Mr. Chairman, projects of this nature are important investments in the future. They are valuable conservation projects that protect life and property for the future. They are sound investments, and are rewards for sound planning for the future. However, Mr. Chairman, because of today's economic situation, these projects have an additional value -- that of creating jobs when our country is suffering from excessive unemployment.

Mr. Chairman, the area of my State in which this project is located traditionally struggles with the problems of unemployment. No one here has to be convinced of the seriousness of this problem. The construction of this project will help toward solving this problem. Construction jobs are valuable jobs, and we must recognize this as an additional benefit of this project that is particularly important at this time.

Mr. Chairman, I hope the Members of this Committee will agree with me on the importance of this project, and look upon it with favor.

## QUESTIONS PERTAINING TO SAN FELIPE CREEK WATERSHED, TEXAS

QUESTION

Nonagricultural impoundments account for 75% of total benefits. Please elaborate. Specifically, what are they?

RESPONSE

Nonagricultural improvements are roads, bridges, railroads, and residential, commercial, and industrial properties. There are 365 residences and 35 businesses in Del Rio which will be benefited directly by a reduction of floodwater and associated damages. Estimated floodwater damages to urban properties from the 100-year frequency flood amount to \$846,400. These would be reduced by the project to \$4,000.

QUESTION

Please describe the archeological resources that are believed to be subject to disturbance or destruction?

RESPONSE

The Texas State Historical Commission recognized several locations in the watershed as having historical significance. Included are Camp Hudson, the Old Perry Building, and San Felipe Springs, but none will be affected by the project measures.

Under contract with the National Park Service, an intensive archeological survey of the floodwater retarding structure site was conducted by the Texas Archeological Survey, University of Texas at Austin. This survey yielded evidence of 13 archeological sites which may be affected by installation of the floodwater retarding structures. The debris encountered consisted of discrete areas of aboriginal fire hearths, fire

hearth remnants, and incipient midden accumulations and shallow midden accumulations with no discernable discrete features. Chipped stone artifacts and debris were associated with all of the sites recorded during this survey.

#### QUESTION

Are there threatened or endangered wildlife species in the watershed, and if so, what would be the project's effects on them?

#### RESPONSE

The watershed is within the range of the bald eagle, American peregrine falcon, ocelot, jaguarundi, margay, mountain lion, and jaguar, which are considered threatened species. These species may occasionally occur in the watershed but are not known to be residents. The Rio Grande Darter is listed as a peripheral threatened species by the Fish and Wildlife Service and may occur in San Felipe Springs and San Felipe Creek. The Devil's River minnow is also reported to occur within the watershed.

The project is not expected to have a significant impact on any threatened or endangered species.

#### QUESTION

What would be the ecological effects on the San Felipe Springs and surrounding habitat?

#### RESPONSE

The project is not expected to have any significant adverse effect on the San Felipe Springs and surrounding habitat.

The average annual sediment yield from the watershed will be reduced from an estimated 23 acre-feet to 16 acre-feet as a result of the land treatment and floodwater retarding structure. This will improve the quality of the water that joins the flow from San Felipe Springs.

The watershed area above San Felipe Springs is within the recharge zone and any ground water intake points are hydrologically connected with the springs. The sponsors will work with the Texas Water Quality Board in taking any necessary steps to protect the water quality.

QUESTION

How many acres are in the flood plain? How many acres would be covered by the reservoir?

RESPONSE

An estimated 783 acres of the watershed, excluding stream channels, is flood plain. This is the area that would be inundated by a 100-year frequency flood. This includes 362 acres of rangeland, 147 acres of pasture and hay, and .274 acres of roads, railroads, and urban.

A total of 488 acres of rangeland will be required for the construction and proper functioning of the floodwater retarding structure. The dam and emergency spillways will require 40 acres and the sediment pool 160 acres. Vegetation will be cleared from a total of 92 acres. Clearing in the sediment pool will be limited to 52 acres or that area below the lowest ungated outlet elevation. Existing vegetation will be disturbed as little as possible. The retarding pool will require an additional 288 acres. The vegetation on this area will be left intact.

QUESTION

Will the planned location of emergency spillways in relation to San Felipe Springs have any effect on fish and wildlife?

RESPONSE

The emergency spillways are not expected to have any significant effect on the fish and wildlife resources.

The sinkhole in the emergency spillway forebay area and San Felipe Springs are hydrologically connected. Expected urban and industrial expansion will result in increased potential sources of pollution. The sponsors will work with the Texas Water Quality Board in taking any necessary steps to protect the water quality.

QUESTION

What transportation systems would be protected by the project?

RESPONSE

U.S. Highways 90 and 277, the Southern Pacific Railroad, and numerous streets within the city of Del Rio will be protected by the project.

QUESTION

What nonagricultural improvements are involved?

RESPONSE

Nonagricultural improvements are roads, bridges, railroads, and residential, commercial and industrial properties. There are 365 residences and 35 businesses in Del Rio which will be benefited directly by a reduction of floodwater and associated damages.

QUESTION

Will public access be allowed at the reservoir site?

RESPONSE

The proposed project includes one single purpose floodwater retarding structure. The local sponsors' objectives did not include providing storage for recreation because of the proximity of water based recreation

at Amistad Dam. Therefore, recreation was not included as a purpose and the sponsors will not acquire land rights to provide for public access.

#### QUESTION

This project would provide flood protection the city of Del Rio. In view of the fact that better than 98 percent of the benefits are attributed to urban development, it is surprising to see the Department of Agriculture proposing such a project instead of the Corps of Engineers.

How is it that you are proposing a project in which the benefits to agricultural property are less than two percent?

#### RESPONSE

The direct benefits to nonagricultural improvements (urban, roads and bridges, residences, commercial and industrial properties) for this project are estimated at \$149,300, or 75 percent of the total average annual benefits.

The agreements between the Corps of Engineers and the Soil Conservation Service dated January 19, 1959, and September 23, 1965, outline the agency guidelines for participation in urban flood protection. In general, these agreements refer to size of drainage area, floodwater and total storage capacity, floods of major and minor magnitude, upstream and downstream agriculture, and urban areas.

The San Felipe Creek Watershed project is clearly in the area of the Soil Conservation Service's responsibility as outlined by the agreements discussed above.

QUESTION

In view of the fact that floods larger than 100-year floods can and do occur, did you consider providing a larger degree of protection? It would seem economically feasible, in view of the 6.6 benefit-cost ratio and the intense urban development that would be affected, to provide additional protection without endangering the economic viability of the project.

RESPONSE

Consideration was given to providing more than a 100-year level of protection. One consideration was for some channel work within the city of Del Rio. Problems encountered with this additional structural measure were channel stability and high land rights and relocation costs. In our consideration for providing the additional protection, the additional increments of costs exceeded the additional increments of benefits and therefore the increments were not included in the plan.

QUESTION

The Flood Disaster Protection Act of 1973 requires communities to participate in the flood insurance program and to adopt adequate flood plain ordinances to regulate the 100-year flood plain in order to reduce or avoid future flood losses. Compliance with these requirements is necessary for communities to benefit from future federal financial assistance (e.g. FmHA housing loans).

Has the city of Del Rio adopted any flood plain regulations? Do they have plans to do so?

It would seem appropriate, in view of the fact that this project is a form of federal financial assistance, that the city should at least adopt flood plain ordinances to regulate the "after project" 100-year flood area.

RESPONSE

Del Rio has enacted a flood plain regulation ordinance. The enacted ordinance precludes any new development in the flood plain except that

for which the floor elevation is at least 1.0 feet above the 100-year expected flood elevation. The city is currently taking necessary steps to carry out the provisions of the ordinances. The city is eligible for flood insurance and is participating in the emergency flood insurance program.

They have also received a Flood Plain Information report prepared by the Corps of Engineers for Cienegas Creek and Cantu Branch.

#### QUESTION

I note in the work plan that the sponsors are aware that the project will not provide complete flood protection to all urban properties subject to flooding. The city of Del Rio will notify those property owners involved of the flood hazards that would still exist after completion of the project.

This warning will only apply to the reduced 100-year flood plain; that is, that portion of the 100-year flood plain that would not be protected by your project. I am not sure this will be adequate. You will be building up a false sense of security which could prove disastrous when and if Del Rio is hit with a flood that exceeds your dam capacity and thus floods an area larger than the reduced 100-year flood area.

History shows that the 100-year flood has been exceeded in several locations across the nation in recent years. My point is, I don't think you should limit your warning to just that small area.

#### RESPONSE

This project will provide flood-free protection from a 100-year frequency event to all existing urban properties except a portion of the Community Center building, several low water crossings, and yards of houses located along the channel of San Felipe Creek. The depth of water in the area subject to continued flooding from the 100-year

frequency flood is a maximum of 2.3 feet with an average depth of approximately 1.0 feet. With any reasonable precautions, the hazard to life from floodwater will be eliminated.

Many water resource agencies consider the 100-year frequency event to be an acceptable level of protection. The Federal Insurance Administration uses the 100-year flood as the base for their program.

The sponsors are encouraged to use all available data to inform the local people of the remaining flood hazards that may exist. They are also encouraged to adopt flood plain regulations which will provide data about flood hazards.

## SAND CREEK WATERSHED, KANS.

Mr. HAAS. Sand Creek watershed occupies 64,100 acres in south central Kansas in Marion and Harvey Counties. The municipalities of Sedgewick, Newton, North Newton, and Walton are located in the watershed, Wichita, Kans., is located about 26 miles south of the watershed area.

The proposed project measures consist of conservation land treatment practices and structural measures consisting of two floodwater retarding structures and one multiple-purpose flood prevention and creation reservoir with associated recreational facilities.

Some of the impacts of these measures are:

First. An overall estimate of 62 percent decrease in soil loss is expected in the watershed.

Second. Average annual damages will be reduced by 59 percent on about 4,620 acres of flood plain land.

Third. The city of Newton will receive protection from floods up to and including the 100-year frequency flood.

Fourth. The multiple-purpose reservoir will create a 195 acre lake for public fishing and water based recreation which will provide for an estimated 50,000 annual visitor-days of recreation.

Fifth. The reservoirs will increase landscape diversity, improve fish habitat, and provide additional feeding and resting sites for waterfowl.

The total project installation cost is estimated to be \$2.9 million, of which the local sponsors will furnish about \$1.9 million, or 63 percent of the total cost. The benefits are estimated at \$160,900 annually. The benefit-cost ratio is 1.3:1.

[Statements from Senators Dole and Pearson and responses to written questions follow:]

STATEMENT BY SENATOR BOB DOLE  
BEFORE THE SENATE SUBCOMMITTEE ON WATER RESOURCES  
IN SUPPORT OF SAND CREEK WATERSHED PROJECT

October 3, 1975

MR. DOLE: MR. CHAIRMAN, I'M PLEASED TO HAVE THIS OPPORTUNITY TO SAY A FEW WORDS IN SUPPORT OF THE PROPOSED SAND CREEK WATERSHED PROJECT IN KANSAS. RESIDENTS IN THE HARVEY AND MARION COUNTY AREA HAVE LONG ENDURED THE RAVAGES OF SOIL EROSION AND FLOODING. THEY HAVE NOW TAKEN POSITIVE STEPS TO PREVENT SEVERE AND COSTLY LOSSES IN THE FUTURE, AND I BELIEVE THEY ARE ENTITLED TO APPROPRIATE FEDERAL ASSISTANCE FOR THOSE EFFORTS.

AS YOU KNOW, A WATERSHED WORK PLAN AGREEMENT FOR THE SAND CREEK WATERSHED AREA WAS ENTERED INTO IN MAY OF THIS YEAR, BETWEEN THE SOIL CONSERVATION SERVICE AND THE WATERSHED JOINT DISTRICT NO. 68, THE HARVEY AND MARION COUNTY CONSERVATION DISTRICTS, AND THE CITY OF NEWTON. THE PLAN IS SCHEDULED FOR FULL IMPLEMENTATION WITHIN SEVEN YEARS.

THIS AMBITIOUS AND COMMENDABLE PLAN FOR THE 64,000-acre SAND CREEK WATERSHED REGION WILL PROVIDE FOR SOIL CONSERVATION, FLOOD PROTECTION, AND RECREATIONAL OPPORTUNITIES. THESE BENEFITS WILL RESULT FROM CONSTRUCTION OF TWO FLOODWATER RETARDING STRUCTURES AND ONE MULTI-PURPOSE RESERVOIR, IN ADDITION TO A CONSCIENTIOUS APPLICATION OF LAND TREATMENT MEASURES BY LOCAL LANDOWNERS. FURTHERMORE, STUDIES UNDERTAKEN WITH THE ASSISTANCE OF THE SOIL CONSERVATION SERVICE INDICATE THAT LONG-RANGE IMPROVEMENTS IN FISHERY

RESOURCES AND SUITABLE HABITAT FOR MIGRATORY WATERFOWL CAN BE EXPECTED.

THERE IS NO NEED FOR ME TO BELABOR THE BENEFICIAL DETAILS OF THE SAND CREEK WATERSHED WORK PLAN. THEY ARE ALL DESCRIBED IN CAREFUL DETAIL IN THE STATEMENTS PROVIDED TO YOU BY THE DEPARTMENT OF AGRICULTURE. I SIMPLY WANT TO EMPHASIZE THAT THE PROPOSED WATERSHED PROJECT IS EXPECTED TO REDUCE AVERAGE ANNUAL FLOODWATER BY 59%, AND TO REDUCE SOIL LOSS BY ABOUT 69%. THE URBAN AREA OF NEWTON WILL ALSO BE PROTECTED UP TO THE 100-YEAR FLOOD FREQUENCY LEVEL. IN TERMS OF BOTH FINANCIAL SAVINGS AND REDUCTION IN HUMAN SUFFERING, THE FLOOD PROTECTION ALONE CLEARLY JUSTIFIES THE PURPOSES OF THIS PROJECT.

MR. CHAIRMAN, I URGE THE SUBCOMMITTEE TO CAREFULLY EXAMINE THE MERITS OF THIS PROPOSAL. I'M CONFIDENT THAT SUCH A REVIEW OF THE POTENTIAL BENEFITS WILL RESULT IN EARLY APPROVAL OF P.L. 566 FEDERAL FUNDS FOR SAND CREEK WATERSHED BY THIS SUBCOMMITTEE, AND BY THE FULL PUBLIC WORKS COMMITTEE IN THE SENATE.

Statement by Senator James B. Pearson  
Before the Subcommittee on Water Resources  
Of the Committee on Public Works  
United States Senate  
October 3, 1975

SAND CREEK WATERSHED

I would like to commend to your attention, Mr. Chairman, a much needed land management plan for the Sand Creek Watershed located in Marion and Harvey counties in Kansas.

I understand this project is one of nine watershed plans that is before the Committee for consideration. After careful review I am sure that the Committee will find this plan well-prepared and essential to the needs of these communities.

Presently, the area included in this watershed is beset with enormous problems of runoff and flooding, thus destroying much of the economic yield from this valuable cropland. Soil losses of 13 tons per acre per year are not uncommon, and the average soil loss is seven tons per acre per year.

Mr. Chairman, such runoff has severely hampered crop yields and thus farm incomes are considerably less than they would be through proper land management. While the lands of these flood plains are nearly 100 percent more productive than upland farms, their land value is only 17 per cent higher. This threat of constant flood damage depresses land values, yields lower tax revenue to the area economy, and reduces appreciation to the landowner when he sells his land.

This erosion contributes also to the ruin of the woodlands and rangelands, as well as the croplands. The implementation of the Sand Creek Watershed plan would certainly result in more efficient use of land and water resources. Adequate management and protection will be provided for an additional 22,970 acres of cropland, 3,720 acres of rangeland and 300 acres of woodland.

The facts, Mr. Chairman, simply illustrate the need for immediate policy regarding land and water management. It is my information that with the completion of this watershed the loss of soil in the watershed is expected to be 62 per cent lower than at present and that the average soil loss will be reduced from 8.3 tons to 2.3 tons per acre on cropland and from 3 tons to 2 tons per acre on the rangeland. Such management obviously will make a substantial impact on the general area economy.

As with all watershed plans, a primary objective is the reduction of loss to flooding. Newton, which is the largest urban area in this watershed, has continual flooding problems and in 1965 suffered \$1,201,000 in flood damage. It is estimated that through this project the flood damage to Newton, North Newton and Sedgwick will be reduced considerably and it is expected that floodwater damage to agricultural areas will be reduced nearly 45 per cent.

The Army Corps of Engineers has provided flood protection to Newton by modifying the Sand Creek channel through the city. Through modifications to the channel flood protection was increased to handle the 50 year frequency storms.

With the addition of the Sand Creek Watershed the protection to Newton would be extended to cover the 100 year frequency flood. It is also important to note, Mr. Chairman, that this project was designed to compliment existing flood control programs, thus promoting better planning, greater efficiency and lower long-term costs.

Mr. Chairman, the positive attributes of this program are many and the favorable benefit cost ratio illustrates the need for such a project. I am hopeful that the Committee will view this project favorably, and, Mr. Chairman, I appreciate the time given me once again.

## QUESTIONS PERTAINING TO SAND CREEK WATERSHED, KANSAS

QUESTION

The EIS report states that any archeological remains located at the reservoir sites will be damaged or destroyed unless salvaged upon discovery. Do you have plans and funds to carry out salvage of such resources? Have you surveyed the area for such resources, and if so, what were your findings and what is the value of any archeological resources known to exist?

RESPONSE

A preliminary archeological field reconnaissance of the watershed area was conducted by Don D. Rowilson, Consulting Archeologist during August 1974. All areas were randomly probed to a depth of at least 2 feet. No surface evidence of habitational sites was observed in the recreational area of site no. 1 or in any of the proposed structural measures.

Archeological sites that may be discovered during construction will be reported promptly to the Archeological Division of the Kansas State Historical Society and to the National Park Service. We have no funds which have been appropriated to conduct salvage. The procedures outlined in the Archeological and Historical Preservation Act (PL 93-291) will be followed in the event salvage becomes necessary.

QUESTION

Are any redevelopment benefits included in the project?

RESPONSE

No redevelopment benefits were calculated for this project.

QUESTION

It is estimated that 228 acres of wildlife habitat will be permanently lost. Are there plans to compensate in any way for this loss?

RESPONSE

Specific measures have been included in the plan to minimize adverse effects

the project will have on wildlife habitat. These include: two-row tree and shrub plantings in wildlife areas, fencing areas suitable for wildlife and seeding a grass-legume mixture, establishing a sharecropping program on designated areas within the fee title purchase areas, leaving as much woody vegetation within the sediment pools as possible, leaving brush piles suitable for wildlife, seeding cropland within a band 0.5 feet below to 2.0 feet above the normal water surface elevation of the sediment pools to Kanlow switchgrass, and fencing and seeding other odd areas as available.

QUESTION

Will the loss of agricultural acreage be mitigated by improved crop yields, etc.?

RESPONSE

Yes, floodwater damages will be reduced on 3,403 acres of cropland and 688 acres of rangeland. The benefits from reduced floodwater damage to crops and pasture will average \$23,300 annually. With the reduced flood frequency and severity farmers may use more fertilizer, use improved varieties of crop plants, and will be able to plan and perform tillage, planting, and harvesting operations on a timely basis for improved crop yield.

The land treatment program will also result in more efficient use of land and water resources and thus increase farm income. Land treatment measures will result in adequate management and protection on an additional 22,970 acres of cropland and 3,720 acres of rangeland.

QUESTION

Are the cost estimates used accurate given today's price level?

RESPONSE

The estimated project installation costs were developed using a 1974

price base and are still considered current.

QUESTION

Will public access be allowed at all three reservoir sites? If not, why not?

RESPONSE

The sponsoring local organizations will provide public access to the multiple-purpose structure, site no. 1. They will also operate and maintain the recreation facilities associated with this structure.

Public access will not be provided at sites 2 and 3. These structures are single purpose floodwater retarding sites and the sponsors decided not to acquire land rights for public access.

QUESTION

What are the secondary benefits?

RESPONSE

Secondary benefits are net returns which accrue in businesses and industries associated with the production and utilization of goods and services produced as a direct result of the project. Increased farm incomes, due to flood protection, and reduced crop losses, will result in additional expenditures for such items as farm equipment, fertilizers, and materials which, in turn, will increase in net returns for local retailers and wholesalers.

GENERAL QUESTIONS - P.L. 566 ProgramQUESTION

In the civil works program of the Corps of Engineers, structures not exceeding \$10 million in federal cost can be authorized through resolutions of House and Senate Public Works Committees. Projects for which the federal share exceeds \$10 million must be authorized legislatively.

What is the dollar limitation on P.L. 566 projects which are authorized by Committee resolution? (Answer will be "none".)

Am I correct, then, in stating that projects can be authorized under this program solely by Committee resolution...projects with absolutely no dollar limitation? As I understand it, single structures in 566 projects are limited to more than 4,000 acre-feet and less than 25,000 acre-feet in total storage capacity, but there is no limitation on the number of single structures, as long as they are built in watershed areas no larger than 250,000 acres.

RESPONSE

There is no dollar limitation on the PL-566 projects which can be acted upon by the appropriate congressional committees. The effect of the committee resolution is not to authorize federal assistance but to approve the participation of the subject watershed project in funds appropriated for PL-566 watershed operations. The statement concerning structures and watershed areas in PL-566 projects is correct except with respect to storage capacity. A single structure may contain not more than 25,000 acre-feet of total capacity. A plan with single structures containing between 2,500 and 4,000 acre-feet of total capacity is referred to the Agriculture Committees of Congress, while any plan with a single structure with 4,000 acre-feet or more of total capacity is referred to the Public Works Committees.

QUESTION

In the Corps of Engineers planning process, there is ample opportunity for public involvement. Hearings and meetings are held at various stages in the evolution of a project. Is similar consideration given to public opinion in the planning of a P.L. 566 watershed work plan?

By the same token, are citizens and governmental bodies of areas nearby a watershed given opportunity to comment or otherwise be heard? Did you solicit, for example, the views of the State of Oklahoma prior to recommending the McClellan Creek watershed work plan?

RESPONSE

The opportunity for public involvement is probably greater in a proposed watershed work plan than it is in a proposed Corps of Engineers project, and it is obtained and given consideration by similar means.

All public and private interests who may be affected by a watershed plan are given opportunity to participate in decisions regarding it and to comment on the plan and environmental statement.

Our policies on such reviews were similar but perhaps not so far-reaching in 1968 when the McClellan Creek plan was under review. We did not expect project effects more than thirty miles downstream; therefore, we had obtained the views of the State of Texas, but not the State of Oklahoma, when this plan was forwarded to the then Bureau of the Budget in May 1969. At the Bureau of the Budget's suggestion, we obtained the views of the Governor of Oklahoma in November 1969.

QUESTION

Would you please supply for the record a definition of the terms: "indirect", "incidental", and "secondary" as they apply to annual benefits. Can any of these categories include recreation benefits? If so, is the standard 50-50 federal/local cost sharing formula applied?

RESPONSE

Indirect, incidental, and secondary benefits are defined as follows:

Indirect - This category of benefits involves reduction of identifiable losses resulting from floods, even though direct contact with floodwaters is not involved. Some examples of indirect damages are (1) a bridge is

washed out and traffic is forced to detour a considerable distance, (the cost associated with rerouted traffic is indirect damage contrasted to the bridge loss which is a direct damage), (2) a flood causes interruption in the feeding regime of a livestock producer, and although his livestock were not in the flood, the upset slows down the rate of gain and causes extra expense before they are marketable, and (3) an electric power plant is flooded so that power is no longer produced and spoilage takes place in freezers and refrigerators operated by electricity.

Incidental - These benefits result from use of water provided by project measures for purposes other than the planned-for primary purpose. For instance, a floodwater retarding structure for flood prevention contains a sediment pool for the purpose of retaining sediment and assuring proper functioning of the structure for flood prevention purposes. This sediment pool may be used for incidental uses such as livestock watering and recreation until the deposition of sediment renders it no longer useful for such uses.

Secondary - Secondary benefits are net returns which accrue in businesses and industries economically associated with the production and utilization of goods and services produced as a direct result of the project. For example, increasing agricultural products requires inputs of seed, fertilizer and equipment, as well as flood free land and water. Distribution of this output requires transportation, processing, and marketing facilities. The increased net income of these interrelated businesses are the secondary benefits.

As used by the Soil Conservation Service, "indirect" benefits are confined to flood damage reduction and could not include any recreational benefits.

"Incidental" benefits may include those of a recreational nature. "Secondary"

benefits could include some benefit related to recreation in cases where recreation is a primary purpose to which costs are allocated.

Concerning cost-sharing, we are not sure which "standard" cost sharing formula is referred to. Cost sharing for recreation in watershed projects places much more stringent requirements on local interests than in other federal water resource programs. For public recreation in PL-566 projects, local interests must pay at least half of land rights costs, half of construction costs of creating or improving the water body, and half of construction and engineering costs for recreational facilities. In Corps of Engineers and Bureau of Reclamation projects such cost sharing is limited to half of separable costs rather than total allocated costs. However, in all of these programs, cost sharing is based on costs rather than benefits.

#### QUESTION

I note that most of your proposed work plans provide protection for the flood plain from the effects of a 100-year flood, thus allowing for a change in land use or an intensification of land use, either of which is land enhancement.

In cases where this land enhancement is a windfall for a few landowners, do you identify the beneficiaries and require some form of cost sharing?

#### RESPONSE

We identify beneficiaries by type or kind and size range of benefited area rather than by name. We are forbidden by law from requiring any form of cost sharing from individual landowners for windfall benefits, but local organizations receiving the PL-566 assistance frequently have provisions for recognizing the benefits to individual properties and charging them a greater share of project costs.

QUESTION

Also in relation to the 100-year flood, your work plans often report that damages can be expected to continue in the areas to be protected from floods larger than the 100-year flood. The non-preventable damages, however, do not reflect this. Why?

(NOTE: If they did, the benefits would be reduced and several projects would not be economically justified.)

RESPONSE

We assume by "non-preventable" you mean the damages which will continue after the project is installed. In most cases such damages are not "non-preventable" since they could be prevented by some means or other. The damage, or potential benefit, associated with floods larger than the 100-year flood usually represents such a small part of the average annual damage that it may be neglected without influencing the result. The effect of including it would always be to increase project benefits and economic justification, provided that the protective structures are constructed so as to be safe against failure during the extreme flood, as floodwater retarding structures are.

Mr. HAAS. There is one member here on one of these projects, Senator, from Oregon. He might wish to make his statement. However, if you care to hear him, I would certainly yield any time I have remaining to that person.

Senator BURDICK. We have prepared questions for you on these nine projects. If you would supply the answers in writing, that would be helpful to us.

Mr. HAAS. We will be happy to do so.

Senator BURDICK. I believe Senator Bentsen has some questions for you, too.

Mr. HAAS. All right.

Senator BURDICK. Is there one more witness that wants to be heard? I hope you can make it in 5 minutes.

**STATEMENT OF RANDOLPH SMITH, CHAIRMAN, STATE WATER IMPROVEMENT COMMISSION FOR LITTLE LUCKIAMUTE, DALLAS, OREG.**

Mr. SMITH. I am as brief as I am short. My name is Randolph Smith. I am interested in the project in Little Luckiamute and am the farmer member of the committee that sponsored this particular project.

I would particularly like to call your attention to the fact that the project is based on needs, needs for irrigation, water, domestic water, municipal water, and for industrial water, if I forgot that.

We have a great need for recreation in our particular country. Our Polk County Commissioner has set up an ad hoc committee to study the long-range needs of recreation in our county. Twenty-four members have come up with a program.

Currently the Regional Park and Recreation Agency has pledged \$160,000 for development. A good share of the \$160,000 is the recreation feature in our particular program. I have prepared a statement.

I believe you have a copy for the record.

Senator BURDICK. It will be made a part of the record.

Mr. SMITH. I believe that concludes my statement. I appreciate the privilege of being before you. I am also in a hurry to get back to Oregon.

Senator BURDICK. Thank you very much.

[Mr. Smith's statement follows:]

My name is Randolph A. Smith of Rt 2 Box 143, Dallas, Oregon. I am a dairyman. I am currently a Director of the Polk SWCD, on the Board of Directors of Oregon Association of Conservation Districts and chairman of its Water Resources Committee, chairman of the Luckiamute Basin Study Committee, chairman of Little Luckiamute Improvement District, past chairman of the Water Committee of Polk County Long Range Study, past chairman of the Ad Hoc Committee for Polk County's Comprehensive Land Use Plan and I served on the Mid-Willamette Valley Council of Governments, water quality management plan committee.

This project had its inception in 1956 when the U. S. Army Corps of Engineers had a public meeting in Dallas, Oregon. Testimony showed a need for stored irrigation water and recreation. Then in January of 1966 seventy farmers of the area met in Monmouth, Oregon to discuss their water needs. An area wide committee called the Luckiamute Basin Study Committee was formed. From the middle of March to the middle of June 1966 a survey of the water and drainage needs was made by the farmers of the basin. Over two hundred farms were canvassed.

Two pressing needs were apparent; rural domestic water and supplemental irrigation in the Little Luckiamute area. A rural system involving 75 miles of service line serving 350 residents has been installed.

In January of 1967 another public meeting of the Study Committee was held in Monmouth and a report made on the Survey. From January to October the Committee met with the Corps of Engineers, Bureau of Reclamation, Soil Conservation Service, State Water Resources Board, State Engineer, the County Commission and others. From these meetings the committee decided that a PL 566 project would be the best vehicle to meet the water needs of the basin. On October 16, 1967 another public meeting was held and the committee was authorized to apply for planning help under PL 566 and to form a Water Control District. From November 1967 until March 1968 a series of meetings were held in farm homes in the area. Forty-five farmers advanced \$4470.00 at the rate of \$1.00 per irrigated acre to finance the formation of a legal entity. On January 19, 1967 approval of the PL 566 application was received from the Mid-Willamette Council of Governments. A Water Control District was formed in May of 1969 with over 80% of the land signed up. The boundaries of the District included the whole service area of the Domestic Water Cooperative in the Little Luckiamute Basin. A high percentage of the people were nonfarmers. The sponsors are Polk County Board of Commissioners, City of Monmouth, Polk Soil and Water District, and Little Luckiamute Improvement District.

In March of 1968 the application for assistance under PL 566 was filed by the four sponsors with over ten cities, Chambers of Commerce, and public groups endorsing the application. In December of 1967 the application was approved at Washington. Planning was authorized on December 9, 1969.

In December of 1969 a coordinating council of the four sponsors was formed. This group met monthly with the SCS to discuss the plan and its elements. Reports were made to the people by mail on the progress. An agency review was held in Dallas on March 30, 1970. The first written preliminary plan was issued in June 1970.

On July 3, 1974 a public meeting was held to discuss the draft work plan and the proposed draft of the Environmental Impact Statement in Dallas. This meeting was attended by 76 people. In March 1975 the four sponsors approved the final draft and environmental impact statement.

I would like to comment on the elements of the plan:

(1) Flood Control. The upper watershed is in a very high rainfall area (200 inches annually). With each storm, flooding is experienced on 2,761 acres. Damages occur to roads, fences, bridges, soil and crops.

(2) Recreation. Quoting from the Willamette Basin Comprehensive study "Virtually no developed water related recreation land is available in the sub-basin". At the start of planning the seven person Park and Recreation Board of Polk County indicated a desire to be a part of the project and contributed heavily to the planning process. When some opposition developed to the size of the recreation, attempts were made by the Luckiamute Improvement District to scale down the recreation. The recreation group remained strongly in favor of the plan as presented. Finally the Polk County Commissioners, also sponsors, appointed 24 citizens to a Recreational Long Range Needs Committee. After extensive investigation, public meetings and study, this group recommended the plan as presented. As a result of this group's recommendation, and over crowding at all seashore parks, all high mountain lake parks and Federal recreation acres in the State, no change was made in the recreation part of the plan. The need for recreation is an ever growing one.

(3) Municipal, Domestic, and Industrial Water. The college community of Monmouth, 5280 population, has been a sponsor since the very start. The city's water problem goes back for 15 years. Attached is a copy of a letter to our Senator Hatfield that explains the city's position and needs.

The Luckiamute Domestic Cooperative (see above) is presently expanding its coverage in our county near the project structures. It pumps water almost 30 miles to reach the area. The costs could be cut by water from the project, as the supply will be in the area of the greatest need. Their needs are for 500 acre feet of water annually.

(4) Irrigation. The project was started by the farmers of the area. Such products as green beans, sweet corn, peppermint, strawberries, blackberries, clover seed, sugar beet seed, alfalfa, all varieties of vegetable seeds, pasture, and hay are raised. The river was overappropriated, use was very heavy due to changing crop patterns, and a State minimum flow law materially reduced water available. For the last three years water usage for irrigation has been curtailed, thus reducing crop yields. At the very start 35 farmers signed up for 6700 acre feet of water. In 1974 a series of informational meetings were held in farm homes in the area. Farmers indicated a need for an additional 5200 acres of irrigation.

By bringing water to these farms we will insure the continued use of this land to produce food, without it, the farmers face a very uncertain future.

In conclusion, this project is needed to improve the economic status of the whole community, to give needed municipal and domestic water to a small rural community, urban peoples and farms. Our community certainly needs the recreation the project offers. As time passes these needs become much stronger, not less. The project has 100% support of the farmers of the basin.

Mayor  
Richard D. Emken

Council Members  
Daniel G. Cannon  
Patricia L. Jaffer  
Stanley J. Kenyon  
Gail C. Meyer  
Judith L. Miller  
Gordon R. Pratt

# City of Monmouth

Oregon 97361

September 11, 1975

Monmouth Owns its Water  
and Electric Systems

City Manager  
Kenneth R. Martin

City Recorder  
Joan E. Howard

Senator Mark O. Hatfield  
Senate Office Building  
Washington, D. C. 20510

Subject: Little Luckiamute Water  
Improvement District

Dear Senator:

A hearing is scheduled on October 3, 1975 in Washington, D. C. on the Little Luckiamute Water Improvement District Plan. The City of Monmouth is a sponsor of this project for the following reasons:

1. The present water supply for Monmouth is now coming from this watershed area known as Teal Creek which is in the center of above improvement district with water rights dating back to the year 1919.
2. There is no storage area at present at the watershed so that flow is very low during summer months.
3. The City of Monmouth has engineered for other sources but nothing has been adequate for population served.
4. Population growth from year 1964 to 1974 is 160%.
5. In the years 1974 and 1975 sixty-seven (67) homes were constructed under the Farm Home Administration Home Loan Program a federally funded program for housing. A recently approved subdivision of 38 lots with streets, water, sewer is now 65% complete with added burden for the City. All 38 lots will be federally funded housing.
6. We have restricted the use of water within the City this past summer and from all indications more severe restrictions will be in force the summer of 1976.

In view of the above reasons we would urge your 100% support for the project and do your utmost for Mr. Randy Smith, President of the Little Luckiamute Water District, who will be in attendance at the hearing in

Washington on October 3rd. If we understand the proceedings correctly we would also appreciate your continued support of the project in subsequent approval of resolutions in the Senate and House Public Works Committees.

Respectfully requested,

*Richard D. Emken*  
Mayor Richard D. Emken

*Daniel G. Cannon*  
Councilman Daniel G. Cannon

*Patricia A. Jaffer*  
Councilman Patricia A. Jaffer

*Stanley J. Kenyon*  
Councilman Stanley J. Kenyon

*Gail C. Meyer*  
Councilman Gail C. Meyer

*Judith L. Miller*  
Councilman Judith L. Miller

*Gale Roid*  
Councilman Gale Roid

Senator BURDICK. We have one more, Brent Blackwelder, Washington representative of the Environmental Policy Center.

**STATEMENT OF BRENT BLACKWELDER, WASHINGTON  
REPRESENTATIVE, ENVIRONMENTAL POLICY CENTER**

Senator BURDICK. Can we get a condensed statement from you, too?

Mr. BLACKWELDER. If my full statement could be included in the record.

Senator BURDICK. It will be received.

Mr. BLACKWELDER. I guess I have a minute or so, is that right?

All I can say at the outset then is that we have some problems with the manner in which the projects are presented to the committee. Take Rabon Creek watershed. Senator Thurmond appeared and said the Interior Department's objections to the project have been waived, yet there is no indication in the environmental impact statement or work plans that any of the really major concerns that the Interior Department had, had been resolved. Save for one item on flow releases.

Senator BURDICK. Which watershed is that?

Mr. BLACKWELDER. Rabon Creek watershed in South Carolina. It puts citizens' organizations in a very difficult position of commenting when the final work plans and comments from other agencies are changed in midstream.

Another project, the McClellan Creek project, is coming before this committee without an adequate environmental impact statement. The Soil Conservation Service filed one on August 11, 1970. It is clearly inadequate and not in compliance with current CDQ guidelines. It might also be in violation of the committee's rule No. 13. Furthermore, we all feel these projects seem not to be following standards put into effect by the Water Resources Council in 1973. I had assumed that under those principles and standards, the committee would be confronted with several alternative proposals fully costed out and evaluated. Instead, we have merely weak discussions of alternatives, not the full, detailed alternative plans that we hoped that the committee would have and that I know all environmental groups hoped the committee would be able to see.

One of these plans you may know requires full contribution be given to the environmental quality objective. We haven't seen any environmental plans accompanying these proposals.

I think that is probably all I really want to say right now. There are a number of points I might like to make. How long will the record be opened?

Senator BURDICK. Two weeks.

Does your prepared statement deal in more detail with what you just said now?

Mr. BLACKWELDER. My statement covers the variety of the watershed projects now before the committee. I am speaking in the case of the South Carolina project on behalf of the South Carolina Environmental Coalition, and in connection with the Oregon project on behalf of the Oregon Environmental Council.

Some projects we oppose, on others we suggest minor changes, still on others we have posed some questions we hope the committee would ask Soil Conservation Service to clarify.

Senator BURDICK. Your statement details those things?

Mr. BLACKWELDER. My statement does detail those.

Senator BURDICK. Thank you very much. If you care to make any further statements, you have 2 weeks.

Mr. BLACKWELDER. Thank you, Mr. Chairman.

Senator BURDICK. Thank you very much.

[Mr. Blackwelder's statement follows:]

## ENVIRONMENTAL POLICY CENTER

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TESTIMONY OF BRENT BLACKWELDER, WASHINGTON REPRESENTATIVE OF THE ENVIRONMENTAL POLICY CENTER, BEFORE THE WATER RESOURCES SUBCOMMITTEE OF THE SENATE PUBLIC WORKS COMMITTEE, CONCERNING PENDING SCS WATERSHED PROJECTS, ON OCTOBER 3, 1975

Introduction. My name is Brent Blackwelder and I am a Washington Representative of the Environmental Policy Center which is a national conservation organization with offices at 324 C St. S.E., Washington, D.C. 20003. We appreciate the opportunity to present our views on the SCS Watershed projects now being considered by the Senate Public Works Committee. We will offer specific comments and criticisms on several of the nine projects being examined. At the outset several important points must be raised about this collection of projects. First, some do not seem to conform to the Principles and Standards of the Water Resources Council promulgated in October of 1973. Second, there is an excessive reliance on structural measures to accomplish flood control objectives with little heed paid to the encouragement and directive given in the 1974 Water Resources Development Act to consider nonstructural alternatives thoroughly. Third, there is a failure to address some serious questions posed by the Department of the Interior on some projects. Fourth, there is a noticeable lack of compliance with the National Environmental Policy Act.

The Environmental Policy Center wishes to call the Committee's attention to the fact that spending tax monies on dam building activities results in a net job loss across the nation. We are submitting for the record a list of employment figures for various types of federal programs. These figures show that water resource construction activities create much less employment than most other federal programs, and even in the construction area more jobs are created by expenditures on mass transit or waste treatment plants. Simply not taxing the public to pay for these projects would create more jobs nationwide. Furthermore, dam building is among the most energy intensive of the programs undertaken by the Federal Government.

Rabon Creek Watershed (South Carolina). The South Carolina Environmental Coalition which represents some 30 conservation and civic groups across the state of South Carolina has asked us to speak in opposition to this project. Our primary grounds of opposition are those expressed by the Department of the Interior in its letter of October, 1974, to the SCS. Interior concluded after its review of the project that "the proposal's implementation will seriously degrade a productive flood plain ecosystem. Fish and wildlife habitat offered by the abundant bottom-land hardwood forests has not been afforded thorough consideration during project formulation." Interior noted that the

Rabon Creek flood plain "provides the best quality wildlife habitat in the general project area" and that "the proposed project will be significantly deleterious to the wildlife resources of the Rabon Creek Watershed." Despite these strong Interior Department comments we find no admission of the severe nature of these adverse impacts by the SCS in the final environmental impact statement. The SCS asserts that only 11 per cent of the bottomland wildlife habitat will be destroyed, but Interior specifically told the SCS that "Superficially this might appear to be a minor loss, but in view of the value of these wetlands to wildlife resources and the fact that bottomland habitat is relatively limited when compared to uplands, this loss will be of major significance." We believe that the SCS is deliberately evading its responsibility for telling the public and Congress about the true nature of the project's impacts and that the environmental impact statement on Rabon Creek is a prime example of the SCS's inability to comply with the National Environmental Policy Act.

In our judgment the project plan in no way complies with the new Principles and Standards of the Water Resources Council. For example, the Environmental Quality plan could in no sense be justified as the plan which makes its primary contribution to the objective of environmental quality. The project plan for the area which would make the greatest contribution to the EQ objective while accomplishing the objectives of flood control and water supply would be alternative D--land treatment, flood proofing, land use compatible with present flooding, and municipal and industrial water from Lake Greenwood. The failure to give realistic consideration to an alternative like D suggests that the SCS is not willing to carry out the mandate to fully consider nonstructural alternatives given to it by this Committee in the Water Resources Development Act of 1974. This Committee recognized that the nation would have to make a concerted effort to implement nonstructural measures to reduce the nation's flood losses. Yet in the Rabon Watershed we find an agency agreeing to a project designed, in the SCS's own words, to intensify use of flood prone areas. We urge this Committee to direct the SCS to drop its present plan and to look seriously at implementation of Alternative D.

We feel that the SCS should be reprimanded for not paying more than superficial heed to Interior's opposition to the project. One example of the SCS's attempt to present a distorted picture of the facts can be seen in its claim that the proposed reservoirs will provide "an escape for deer from free-running dogs" (p.31 FEIS). Yet Interior had specifically told the SCS in the October, 1974, letter that "we question the potential effectiveness or, for that matter, the need for such an 'escape facility'. Studies conducted in various states have shown that running by dogs has no measurable effect on the productivity of white-tailed deer herds. We suggest that the primary consideration for deer management in the Rabon Creek watershed should be the conservation and management of the existing high quality bottomland habitat." So here the SCS not only has failed to take up the question of the serious destruction of deer habitat, but it has gone on to imply that the project will be beneficial rather than detrimental to deer.

The largest category of benefits for the project stem from flat-water recreation. We seriously question the need and the desirability of providing more man-made lakes in this part of the country. A look at a map of South Carolina will show at a glance that the Federal Govern-

ment has already tremendous numbers of areas for flat-water recreation in the reservoirs, Hartwell and Clark Hill, on the Savannah River and in the Trotters Shoals (Richard B. Russell Lake) now being built.

Finally, the following very basic question should be put to the SCS: why does it insist on putting forward a proposal to convert environmentally significant acreage into cropland when there is so much other cropland in the State of South Carolina which could be farmed without such serious adverse environmental impacts? We find no legitimate reason to take prime bottomland hardwood forests and convert them to cropland when there is so much other farmland in the State that is going idle.

McClellan Creek Watershed (Texas). We believe that some telling objections can be raised against this project. First, there is no adequate environmental impact to accompany the project. The SCS filed an impact statement with CEQ on August 11, 1970, but this was at a time when SCS's statements were very brief and could not be considered as adequate compliance with NEPA. We raise the question of why this project is going to the hearing stage without an updated environmental impact statement. Without such a statement it is difficult for concerned citizens to evaluate the proposal. Consideration of McClellan Creek Watershed at this time would appear to violate the Committee's own Rule 13 for operating procedures.

We hope that the Committee will delve into some serious matters relating to this project proposal. First, a large percentage of the project benefits stem from ground water recharge which is listed in the Work Plan as merely an incidental benefit. Is there an attempt here to escape the cost sharing provisions that would be required if this were to be counted as a provision of water for M&I purposes. Second, has the SCS included the construction cost of the recreational facilities and the operation and maintenance of these in the annual charges? Third, what guarantees are there that the lakes built with tax dollars will be open to the public rather than being private recreational areas for a few landowners?

Finally, we are disturbed about the policy of having a project come forward for approval which does not have an up-to-date interest rate. We urge this Committee to ask the SCS what the benefit-cost ratio of this project would be under the current 6-7/8% rate. We question the wisdom of allowing the Administrator of the SCS to fix the interest rate when he prepares project documents. This virtually insures that the project will come before this Committee without the current interest rate being applied. If these projects are being sold to the Congress and the American taxpayers as sound financial investments, then it is difficult to see any rationale for permitting projects to come up for approval which cannot meet current economic tests.

Red Deer Creek (Texas). In reviewing the Work Plan for this project, we note that about 85% of the flood control benefits will accrue to one railroad, yet no cost sharing is involved. (\$241,400 out of \$291,000 accrue to the railroad. See p.69 of the work Plan.) We question the propriety of proceeding under such circumstances. In the Work Plan the SCS provides no discussion of the incremental justification

for the 20 dams proposed. It would be desirable to know how much flood control is to be achieved by each relative to the cost for each.

Paluxy River Watershed (Texas). In reviewing the Work Plan it would appear that the size of the watershed has been artificially restricted to less than 250,000 acres in order to conform to the provisions of PL-566. About half of the flood control benefits accrue to the community of Glen Rose which lies outside the boundaries of the watershed. As in the case of the Red Deer Creek Watershed there is no breakdown on the incremental justification of the 26 dams involved. The Interior Department noted in its comments on this project that it could have beneficial effects on fish and wildlife if its recommendations were implemented and landowners were required, rather than merely encouraged to carry out measures for protecting fish and wildlife. The SCS in its reply maintains that it does not have the power to do so. We fail to see why the SCS cannot write this in as a specific element of the cost-sharing contracts.

Little Dicklamato River Watershed (Oregon). The Environmental Policy Center here is speaking on behalf of the Oregon Environmental Council which is a coalition of 72 conservation, planning and sportsman organizations and over 2500 environmentally concerned Oregonians. Far and away the largest category of benefits of this project stem from flat-water recreation which comprises about one third of the total benefits and more than one and a half times that of any other benefit category, according to the updated figures in the Work Plan. Yet the Mt. Jefferson Group of the Sierra Club pointed out in its comments on the draft impact statement:

"The recreation aspects of the reservoir are greatly overrated. Perhaps the rationale promoting the recreational values would be convincing if the reservoir was proposed for West Texas but here in Falls City, Oregon with the Willamette River and the Greenway park system only 13 miles downstream and the Pacific Ocean beaches accessible just 40 miles to the west, the recreational claims are ridiculous to anyone familiar with the area." The

Furthermore, a glance at the recreation figures presented on page T-11 reveals of the 2640 people that would visit the facility on a peak day 2000 of these would be involved in picnicking, camping, nature walks, and hiking while only 450 would be involved in water-based activity. Thus, most of the activity could take place in areas where there are no lakes. We question the wisdom of spending more tax dollars on artificial lakes, especially in an area that affords many recreation opportunities without investment of monies in heavy construction activities like dam building.

We believe that the effects on fish and wildlife will be adverse rather than beneficial, with more than 4 miles of excellent spawning beds being destroyed and over 5000 acres of wildlife habitat being converted to high intensity cropland and facilities for water storage and distribution.

As with other projects being considered by this Committee, we find that the proposal for the Little Lucklamute River Watershed does not comply with the new Principles and Standards of the Water Resources Council. These Principles and Standards provide that several plans for the given area be worked out, including one that makes its primary contribution to the objective of environmental quality. The SCS, however, is again only presenting one plan to Congress on a take-it-or-leave-it basis, without having fully explored and costed out other alternatives.

Finally, we note that the SCS claims that it does not really serve as an advocate of project proposals, but rather always depends on the vigorous support of the sponsoring bodies in the affected area. In this case, the SCS never comes to grips with the unusually strong opposition from residents of Falls City which is the community most directly impacted by the construction activities that would attend the construction of this project. We also note that the Polk SWCD has a poor record of implementation of land treatment measures. The Sierra Club called attention to the fact that only 20 per cent of the planned conservation practices have been applied with conservation plans having been developed on only 6 of 60 farms covering about 1 percent of the watershed. The SCS does not deny these facts but indicates that the project should help accelerate the rate of land treatment application. We think that a SWCD should have a better track record before it comes to the Congress seeking additional funds for a large project.

Leona River Watershed (Texas). We believe that the channelization proposed for Cooks Slough should be deleted from the project. The concerns about this channelization expressed by other agencies have not adequately been answered in the final environmental impact statement.

## CANBY CREEK WATERSHED (MN)

The Canby Creek project aims to achieve three goals: Watershed Protection, Flood Prevention, and Recreation. At the outset, it is important to mention that we endorse the land treatment measures proposed as part of the project. The measures are designed to protect the land from excessive soil loss either by wind or water erosion. We feel that they adequately protect the watershed. We object to this proposal because of a number of other considerations.

We share the goal of flood damage reduction but object to the method of implementation adopted by the Soil Conservation Service. The Soil Conservation Service excessively relies on structural solutions to flood problems. The flood damage reduction objective can be achieved by a number of other means. Unfortunately, the SCS investigated project alternatives in a superficial manner. The Environmental Protection Agency also voiced this complaint--"More information is needed in the EIS to evaluate proposed alternatives (Appendix B, the Alternatives section of the EPA letter)." Their suggestion--"...the Alternatives section of the EIS should be expanded to present visible alternatives to the project and should describe and compare the respective water quality impacts for each alternative." Finally, we call your attention to the fact that this project does not conform to the Principles and Standards of the Water Resources Council which went into effect in October 25, 1973. These planning standards have the significant advantage of providing not just one, but but several plans for a given area and allowing the appropriate Committee to make a choice of the plan that it deems most desirable. This proposal provides no comprehensive benefit/cost studies on the project alternatives. Thus, no effective comparisons can be made of all the alternatives. I will present a few alternatives and discuss their advantages.

It is the practice of the Soil Conservation Service to design proposals which attempt to prevent floodwaters from reaching men. To attain this end, the SCS has proposed and built dams and channelization projects with all reliance on structural solutions to flood problems. We feel that the best solution to the flood problem is keeping people out of the flood plain. Two proposals, consonant with this end, come to mind.

One the entire flood plain could probably be purchased for less than the cost of the structures which are designed to benefit the flood plain. Since the selected project only provides partial protection and probably costs more than the land to be benefited, this alternative should be carefully considered. This method would probably cause some inconvenience and disrupted operations but it would permanently eliminate the problem. This alternative is being implemented at other locations in nearby Wisconsin (Prairie du Chien and La Crosse). This alternative is also being implemented on the Charles River in Massachusetts and on the Littleton in Colorado. The Wisconsin Department of Administration notes that this method provides "...greater flood damage reduction at a lower cost than would be possible through structural measures." The purchased flood plain could be used for anything which only required minimal structural features. Parks, golf courses, athletic fields, campgrounds, trails, and picnic areas have been built on many flood plains throughout the nation.

Two, a somewhat similar proposal would be a combination of flood plain zoning and flood insurance. This would prevent additional build-up in flood-prone areas and would mitigate damages to existing residential properties and businesses in the flood plain.

If the SCS continues propose floodwater-retarding structures, they should consider single-purpose flood prevention structures coupled with a land treatment program. One viable alternative consists of three single-purpose floodwater-retarding structures at the same locations as shown on the Project map. The SCS concedes that "...this alternative would provide a level of flood protection identical to that of the selected plan.

The impacts of this alternative are:

- "1. Eliminate a quarter mile of trout stream.
- "2. Remove 360 acres from agricultural production." (page 37, Paragraph 1, the Environmental Impact Statement)

Look at the "Adverse Environmental Effects Which Cannot Be Avoided" by the selected plan: (See page 36, number 4, the Environmental Impact Statement)

- "E. Permanently inundate  $1\frac{1}{2}$  miles of trout stream.
- "C. Eliminate 690 acres from agricultural production."

The adverse effects of the selected plan are not only more severe in quality, there are also three more disadvantages. They are:

- "A. Increase duration of flooding on downstream low-lying areas.
- "E. Reduce natural habitat on approximately  $4\frac{1}{2}$  miles of channel.
- "D. Increase noise, solid waste, air pollution."

A quick glance at pages 36 and 37 of the EIS will confirm this presentation and show that no evidence has been omitted on our part. Why did the SCS adopt a proposal which they concede has more disadvantages than another proposal with similar benefits?

The recreation which results from this project deserves special attention. The recreation benefits used to justify the project amount to about one half of the total benefits--\$73,700 out of \$146,500 or 48.9%. (Appendix A--Comparison of Benefits and Cost) The Minnesota Department of Natural Resources feels that "paragraph five estimates recreational use of the R-1 reservoir at 47,800 visitor days annually. We believe this estimate to be high, based on earlier computation by the Inter-Agency Biology Review Team." (Appendix B--Letters and Comments Received on the Draft Environmental Impact Statement) Thus the recreational benefits of this project may be exaggerated, which would cast doubt on the economic attractiveness of the project.

We do not believe that the use of enormous recreation benefits to justify this project is legitimate since there are already an abundance of flat-water recreation facilities in the Canby Creek Watershed area. As the Minnesota Department of Natural Resources points out, "Neither the Work Plan or Environmental Statement acknowledge the presence of nearby recreational areas such as Lake Hendricks, Lac Qui Parle, Big Stone Lake and Lake Cochran, all of which are extensively used for outdoor recreation." (Appendix B--Letters and Comments Received on the Draft Environmental Statement) It is foolish to appropriate tax monies for a project that provides superfluous recreational benefits.

While discussing economic justification for the project, a second related objection arises. There is a lack of balance between the costs of some features of this project and the value of the benefits these features produce. The project costs should be discussed in relation to the major problems and objectives of the project. We view with some concern that a large percent of the costs are to be spent on structural measures supposedly resulting in recreational benefits although the major problems are identified as floods and floodwater damages. It is also worth noting that the benefit/cost ratio is marginal-- $1.16/1$ --\$155,400 + \$133,570. (Addendum, third paragraph, the Work Plan)

We would like to raise one last consideration with regard to this project. The U.S. Department of Interior states that they "believe the environmental statement to be inadequate in its attention to cultural (historic, archeological, architectural) resources. Aside from consultation of the National Register of Historic Places and correspondence with the State Historic Preservation Officer, it appears that no effort was made to undertake the sort of interdisciplinary investigation of cultural resources and of project effects upon them during planning required by the National Environmental Policy Act. The extent to which cultural resources may be adversely affected by the project, then, is undetermined." (Appendix B--Letters and Comments Received on the Draft Environmental Statement) In the Work Plan, the SCS acknowledges that "geological, archeological, and historical resources are known to exist."

(Page 1, paragraph 6, sentence 1, the Work Plan) If this is true, the SCS should conduct a more comprehensive study as required by the National Environmental Policy Act. The U.S. Department of Interior proposed the most desirable solution--"...an investigation of the affected area must be undertaken by persons professionally trained to locate, identify, and evaluate historic, archeological and architectural resources. The results of the survey should be sufficient to provide a substantive description of affected cultural resources, an assessment of the effects of the project upon them, and a program of measures that will be instituted to avoid or mitigate adverse effects to the extent possible." (Appendix B--Letters and Comments Received on the Draft Environmental Statement) Until this action is complete, the Environmental Impact Statement should be considered incomplete.

**Senator BURDICK.** The meeting is adjourned.  
[Whereupon, at 12:30 p.m., the subcommittee recessed, to reconvene subject to the call of the Chair.]



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