

Storage

1010

88 1/4
Ag 8/1
W 31/3/96A

AMEND THE WATERSHED AND FLOOD PREVENTION ACT

Y4
Ag 8/1
W 31/3/96A

HEARING BEFORE THE SUBCOMMITTEE ON CONSERVATION AND CREDIT OF THE COMMITTEE ON AGRICULTURE HOUSE OF REPRESENTATIVES EIGHTY-EIGHTH CONGRESS SECOND SESSION

ON
H.R. 9695 and H.R. 9938

MARCH 19, 1964

Serial 00

Printed for the use of the Committee on Agriculture



NY
1/3 ea.
APP/E/18 W

COMMITTEE ON AGRICULTURE

HAROLD D. COOLEY, North Carolina, *Chairman*

W. R. POAGE, Texas, *Vice Chairman*

GEORGE GRANT, Alabama
E. C. GATHINGS, Arkansas
JOHN L. McMILLAN, South Carolina
THOMAS G. ABERNETHY, Mississippi
WATKINS M. ABBITT, Virginia
PAUL C. JONES, Missouri
HARLAN HAGEN, California
LESTER R. JOHNSON, Wisconsin
D. R. (BILLY) MATTHEWS, Florida
FRANK A. STUBBLEFIELD, Kentucky
RALPH R. HARDING, Idaho
G. ELLIOTT HAGAN, Georgia
GRAHAM PURCELL, Texas
JAMES H. MORRISON, Louisiana
BENJAMIN S. ROSENTHAL, New York
ROBERT B. DUNCAN, Oregon
ALEC G. OLSON, Minnesota
ROBERT L. LEGGETT, California
SPARK M. MATSUNAGA, Hawaii

CHARLES B. HOEVEN, Iowa
PAUL B. DAGUE, Pennsylvania
PAGE BELCHER, Oklahoma
CLIFFORD G. McINTIRE, Maine
CHARLES M. TEAGUE, California
ALBERT H. QUIE, Minnesota
DON L. SHORT, North Dakota
CATHERINE MAY, Washington
DELBERT L. LATTA, Ohio
RALPH HARVEY, Indiana
PAUL FINDLEY, Illinois
ROBERT DOLE, Kansas
RALPH F. BEERMANN, Nebraska
EDWARD HUTCHINSON, Michigan

RESIDENT COMMISSIONER

A. FERNÓS-ISERN, Puerto Rico

Mrs. CHRISTINE S. GALLAGHER, *Clerk*
HYDE H. MURRAY, *Assistant Clerk*
JOHN J. HEIMBURGER, *General Counsel*
ROBERT C. BRUCE, *Assistant Counsel*
FRANCIS M. LEMAY, *Staff Consultant*

SUBCOMMITTEE ON CONSERVATION AND CREDIT

W. R. POAGE, Texas, *Chairman*

E. C. GATHINGS, Arkansas
LESTER R. JOHNSON, Wisconsin
FRANK A. STUBBLEFIELD, Kentucky
JOHN L. McMILLAN, South Carolina
G. ELLIOTT HAGAN, Georgia
ROBERT L. LEGGETT, California
A. FERNÓS-ISERN, Puerto Rico

CLIFFORD G. McINTIRE, Maine
DON L. SHORT, North Dakota
RALPH HARVEY, Indiana
ROBERT DOLE, Kansas

CONTENTS

Brief history of efforts to amend Public Law 566 to increase the flood-water detention capacity from 5,000 to 12,500 acre-feet	Page 7
Freeman, Orville L., Secretary of Agriculture, U.S. Department of Agriculture, proposed draft of a bill to amend the Watershed Protection and Flood Prevention Act, letter of March 20, 1963	2
H.R. 9695, a bill to amend the Watershed Protection and Flood Prevention Act, as amended	1
H.R. 9938, a bill to amend the Watershed Protection and Flood Prevention Act, as amended	1
Typical statements from State conservationists regarding the 5,000 acre-foot limitation of floodwater storage	11
Watershed projects approved under Public Law 566:	
Administratively	31
By Agriculture Committees	26
By Public Works Committees	30
Weber, Eugene W., Deputy Director of Civil Works, Office of the Chief of Engineers, U.S. Army, statement of	38
Williams, Donald A., Administrator, Soil Conservation Service, U.S. Department of Agriculture, statement of	3

CONTENTS

Introduction 1

Chapter I 10

Chapter II 20

Chapter III 30

Chapter IV 40

Chapter V 50

Chapter VI 60

Chapter VII 70

Chapter VIII 80

Chapter IX 90

Chapter X 100

Chapter XI 110

Chapter XII 120

Chapter XIII 130

Chapter XIV 140

Chapter XV 150

Chapter XVI 160

Chapter XVII 170

Chapter XVIII 180

Chapter XIX 190

Chapter XX 200

Chapter XXI 210

Chapter XXII 220

Chapter XXIII 230

Chapter XXIV 240

Chapter XXV 250

Chapter XXVI 260

Chapter XXVII 270

Chapter XXVIII 280

Chapter XXIX 290

Chapter XXX 300

Appendix 310

Index 320

iii

AMEND THE WATERSHED AND FLOOD PREVENTION ACT

THURSDAY, MARCH 19, 1964

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CONSERVATION AND CREDIT OF THE
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 1310, Longworth House Office Building, Washington, D.C., Hon. W. R. Poage (chairman of the subcommittee) presiding.

Present: Representatives Poage, Cooley, Gathings, Johnson of Wisconsin, Stubblefield, Harvey of Indiana, and Dole.

Also present: Representative Duncan.

Martha Hannah, staff; and Robert Bruce, assistant counsel.

Mr. POAGE. The subcommittee will come to order.

Mr. Williams, we are glad to have you with us with your competent staff, who have been here the last 2 days. We are glad to have you here personally today. I see that the author of one of these bills has just come in, our chairman, and I believe that we will proceed and let you, Mr. Williams, explain the purpose of the pending legislation.

We will be glad to hear you on H.R. 9695 and H.R. 9938.
(H.R. 9938, H.R. 9695, and the department letter follow:)

[H.R. 9938, 88th Cong. 2d sess.]

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 2 of the Watershed Protection and Flood Prevention Act (68 Stat. 666), as amended, is amended by striking out "more than five thousand acre-feet of floodwater detention capacity" and inserting in lieu thereof "more than twelve thousand five hundred acre-feet of floodwater detention capacity".

[H.R. 9695, 88th Cong. 2d sess.]

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Watershed Protection and Flood Prevention Act (68 Stat. 666), as amended, is amended as follows:

(a) Section 2 is amended by striking out "more than five thousand acre-feet of floodwater detention capacity" and inserting in lieu thereof "more than twelve thousand five hundred acre-feet of floodwater detention capacity".

(b) The sentence immediately preceding the proviso in section 2 is amended to read as follows: "No appropriation shall be made for any plan, including any watershed or subwatershed work plan in connection with the eleven watershed improvement programs authorized by section 13 of the Act of December 22, 1944 (58 Stat. 887), as amended and supplemented, not heretofore approved by the Secretary for Federal assistance for the installation of works of improvement, involving an estimated Federal contribution to construction costs in excess of

\$250,000, or which includes any structure which provides more than twenty-five hundred acre-feet of total capacity unless such plan has been approved by resolutions adopted by the appropriate committees of the Senate and House of Representatives."

(c) That part of paragraph (1) of section 4 which precedes the first proviso is amended to read as follows:

"(1) Acquire, or with respect to interests in land to be acquired by condemnation provide assurances satisfactory to the Secretary that they will acquire, without cost to the Federal Government from funds appropriated for the purposes of this Act, such land, easements, or rights-of-way as will be needed in connection with works of improvement installed with Federal assistance:"

(d) Subsection (3) of section 5 is amended by inserting after "the Secretary shall" the following: ", within sixty days after the plan has been agreed to by the Secretary and the interested local organization,"

(e) Subsection (4) of section 5 is amended to read as follows:

"(4) Any plan for works of improvement involving an estimated Federal contribution to construction costs in excess of \$250,000 or including any structure having a total capacity in excess of two thousand five hundred acre-feet (a) which includes reclamation or irrigation works or which affects public or other lands or wildlife under the jurisdiction of the Secretary of the Interior, (b) which includes Federal assistance for floodwater detention structures, or (c) which includes provision for municipal or industrial water supply or water quality control, shall be submitted to the Secretary of the Interior, the Secretary of the Army, or the Secretary of Health, Education, and Welfare, respectively, for his views and recommendations at least thirty days prior to transmission of the plan to the Congress through the President. The views and recommendations of the Secretary of the Interior, the Secretary of the Army, and the Secretary of Health, Education, and Welfare, if received by the Secretary prior to the expiration of the above thirty-day period, shall accompany the plan transmitted by the Secretary to the Congress through the President."

DEPARTMENT OF AGRICULTURE,
Washington, D.C., March 20, 1963.

Hon. JOHN W. McCORMACK,
Speaker of the House of Representatives.

DEAR MR. SPEAKER: Enclosed for the consideration of the Congress is a draft bill to amend the Watershed Protection and Flood Prevention Act (68 Stat. 666, as amended).

The Department of Agriculture strongly recommends enactment of the proposed amendment to section 2 of the act as a means to provide a more adequate national land and water resources development program and to permit the utilization of the amendments to this act, already enacted in the Food and Agriculture Act of 1962, in the development of sound multipurpose watershed projects. Experience under the existing provisions of the act has demonstrated the need for this amendment.

This change would permit full utilization of available sites for multiple-purpose development. Under the present limitation of 5,000 acre-feet on floodwater-detention capacity, it is not technically possible to design multiple-purpose structures large enough to meet the desires and needs of local organizations for recreation or fish and wildlife development and municipal or industrial water supply under authorizations contained in the Food and Agriculture Act of 1962 (Public Law 87-703). Particularly in low and moderate rainfall areas, the drainage area required to yield the water supply needs of the local people is too large to be controlled by 5,000 acre-feet of flood prevention capacity. As a result, it has been necessary to design multiple-purpose structures with a total capacity substantially below the 25,000 acre-feet maximum size allowed by the act. Increasing the flood-prevention limitation to 12,500 acre-feet will permit designing technically sound structures with capacities up to the 25,000 acre-feet total capacity limitation in practically all parts of the country.

This amendment was recommended to the last Congress in a letter to you dated June 7, 1962.

Since all proposals for projects under the act must be initiated by local agencies and types of projects will differ widely, it is not possible at this time to foresee what effect this amendment would have on requests for assistance and on potential projects.

In addition, the Department recommends an amendment to section 5 of the act to assure full coordination in the review of watershed work plans which include provisions for municipal of industrial water supply with the Department of Health, Education, and Welfare.

The Bureau of the Budget advises that the enactment of this proposed legislation would be consistent with the administration's objectives.

Sincerely yours,

ORVILLE L. FREEMAN, *Secretary.*

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Watershed Protection and Flood Prevention Act (68 Stat. 666), as amended, is amended as follows:

(a) Section 2 is amended by striking out "more than five thousand acre-feet of floodwater detention capacity" and inserting in lieu thereof "more than twelve thousand five hundred acre-feet of floodwater detention capacity".

(b) Subsection (4) of section 5 is amended to read as follows:

"(4) Any plan for works of improvement involving an estimated Federal contribution to construction costs in excess of \$250,000 or including any structure having a total capacity in excess of twenty-five hundred acre-feet (a) which includes reclamation or irrigation works or which affects public or other lands or wildlife under the jurisdiction of the Secretary of the Interior, (b) which includes Federal assistance for floodwater detention structures, or (c) which includes provision for municipal or industrial water supply, shall be submitted to the Secretary of the Interior, the Secretary of the Army, or the Secretary of Health, Education, and Welfare, respectively, for his views and recommendations at least thirty days prior to transmission of the plan to the Congress through the President. The views and recommendations of the Secretary of the Interior, the Secretary of the Army, and the Secretary of Health, Education, and Welfare, if received by the Secretary prior to the expiration of the above thirty-day period, shall accompany the plan transmitted by the Secretary to the Congress through the President."

STATEMENT OF DONALD A. WILLIAMS, ADMINISTRATOR, SOIL CONSERVATION SERVICE; ACCOMPANIED BY HOLLIS R. WILLIAMS, DEPUTY ADMINISTRATOR, SOIL CONSERVATION SERVICE, AND H. O. OGROSKY, HYDROLOGIC ENGINEERING, SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. D. A. WILLIAMS. Mr. Chairman and members of the subcommittee, we appreciate this opportunity to appear before your subcommittee in connection with your consideration of two bills, H.R. 9938 and H.R. 9695, to amend Public Law 566.

I shall first proceed to take up H.R. 9938.

H.R. 9938 would increase the limitation on floodwater detention capacity from 5,000 to 12,500 acre-feet.

The President in his message to Congress January 31, 1964, on agriculture stated:

Much progress has been made under the Watershed Protection and Flood Prevention Act passed by the Congress 10 years ago. Watershed developments are now underway in more than 500 communities. Over 40 percent of these developments have multipurpose objectives, combining watershed protection and flood prevention with recreation, irrigation, fishing, and municipal water supply. These projects, though small, are of vital importance to rural areas. I recommend, therefore, that the Congress enact legislation to increase the project limitation of floodwater detention capacity from 5,000 to 12,500 acre-feet.

In accordance with the recommendation of the President, the Department of Agriculture recommends an increase from the existing 5,000 acre-feet to 12,500 acre-feet in the limitation of floodwater detention capacity in any single structure constructed under the provisions of the Watershed Protection and Flood Prevention Act.

The problem created by the 5,000-acre-foot limitation has up to this time affected the planning on only a small proportion of all Public Law 566 watersheds. The results of a study made in December 1962 indicated that the limitation had been a problem in 99 watersheds in 24 States and Puerto Rico.

The existing limitation of 5,000 acre-feet is incompatible with the overall limitation on total capacity of 25,000 acre-feet and the watershed size of 250,000 acres. The Department does not propose any change in the limits on total capacity or overall watershed size. Thus, the program carried out under the Watershed Protection and Flood Prevention Act will remain a small watershed program in which reservoirs will continue to be small as compared with those heretofore constructed by Federal public works agencies such as the Corps of Engineers or Bureau of Reclamation.

Increasing the limitation on floodwater detention capacity from 5,000 acre-feet to 12,500 acre-feet will serve four purposes. In the order of their importance they are:

1. Provide an equitable balance between the floodwater detention capacity and capacity for other purposes, thus allowing for the full maximum development of the available sites for multiple purposes.
2. Reduce the overall cost of the program on particular watersheds that have unusual topography or distribution of benefits.
3. Increase the economic justification of projects in some areas having unusual topographic features by allowing the protective measures to be located nearer the damage areas.
4. Develop a justifiable program for some watersheds subject to flood damage by snowmelt runoff.

The most important need of the amendment, as we see it, is to provide for the full utilization of available reservoir sites for multiple purposes. This will implement the amendments to Public Law 566 contained in the Flood and Agriculture Act of 1962, Public Law 87-703.

The 5,000-acre-foot limitation on detention storage limits the maximum size of drainage area above any floodwater detention structure. The size of the drainage area determined by this limitation is inadequate to yield the additional runoff for agricultural or nonagricultural water supply permissible under the total capacity limitation of 25,000 acre-feet.

Despite the urgent need, it is impossible in some watersheds to develop the full allowable storage for agricultural and nonagricultural water use because of this 5,000-acre-foot floodwater detention storage limitation. Drainage areas large enough to produce a sufficient volume of water to fully utilize a multiple-purpose reservoir for flood prevention and water supply require a floodwater detention capacity in excess of 5,000 acre-feet. The floodwater detention capacity needed in a 25,000-acre-foot reservoir varies from about 9,000 acre-feet in a 60-inch rainfall belt to about 12,500 acre-feet in a 20-inch rainfall belt. This existing inequity imposes a particular hardship on small municipalities that wish to develop a dependable water supply to attract small industry. Moreover, it causes the wasteful use of scarce reservoir sites.

Increasing the limitation on floodwater detention capacity to 12,500 acre-feet will also result in reduction of overall project costs and increase the benefits in some watersheds. The reduction in costs

would be accomplished by substituting one larger structure for two or more smaller structures. The increase in benefits would result in those watersheds where the topography and flood plain development make it desirable to locate larger structures nearer the damage areas.

This explanation should not be taken as an indication, however, that the small watershed program is inherently inefficient or more costly on the average than a program of large structures. Indeed, the opposite is true. The need for floodwater detention capacity in excess of 5,000 acre-feet is relatively rare. This is clearly demonstrated in our studies in Texas which show that of the 1,647 floodwater retarding structures planned, 1,448, or 88 percent, were planned with a detention capacity less than 2,000 acre-feet; only 37, or 2.2 percent, were planned with a capacity between 4,500 and 5,000 acre-feet. Only seven structures were planned with a detention capacity exceeding 5,000 acre-feet before the limitation went into effect. This conclusion is supported by the analysis in Oklahoma which shows that of the 591 structures planned, only 13, or 2.2 percent, have detention capacity exceeding 4,000 acre-feet. Of the structures planned on the Washita River Basin prior to the effective date of the limitation, only 2 percent exceeded 5,000 acre-feet in floodwater detention capacity.

Although the need for detention capacity in excess of 5,000 acre-feet is relatively uncommon, there are a sufficient number of cases where the saving in both Federal and private funds would be substantial and the benefits increased to warrant the unqualified statement that the average cost of watershed projects to accomplish the desired objectives would be reduced by this amendment.

In some States the justification of projects in areas where snowmelt runoff is the principal source of damage is particularly difficult under the 5,000-acre-foot limitation.

Runoff from snowmelt frequently has a duration of several weeks with only moderate fluctuations in rate. The desired reduction in damages requires sufficient detention capacity to regulate runoff for extended periods without the relief usually afforded by the release of stored water between periods of runoff.

The regulation of snowmelt runoff to within bank stages, with the excess stored for irrigation use, would be possible under the 25,000-acre-foot limitation of total capacity in some watersheds if the 5,000-acre-foot limitation were increased to 12,500 acre-feet. Under the present limitation, it is necessary to release waters from the floodwater retarding pool at rates that often produce insufficient benefits to justify a project, with resulting waste of the scarce water.

I would like now to speak to H.R. 9695.

Subsection (a) of H.R. 9695 is identical with the provisions of H.R. 9938. Since we dealt with the provisions of this subsection in commenting on H.R. 9938, we shall confine our comments on this bill to the remaining four subsections.

Subsection (b) of H.R. 9695 would make subject to the provisions of the Watershed Protection and Flood Prevention Act, insofar as consideration by the appropriate committees of the Senate and House of Representatives is concerned, any watershed or subwatershed work plan in connection with the 11 watershed improvement programs authorized by section 13 of Flood Control Act of 1944 that has not

heretofore been approved by the Secretary of Agriculture for Federal assistance in the installation of works of improvement.

The Department of Agriculture has processed 232 subwatershed work plans within the 11 watershed improvement programs authorized by section 13 of the Flood Control Act of 1944. These subwatershed work plans cover 18,913,000 acres, or about 61 percent of the area of the 11 authorized watersheds. All subwatershed work plans have been prepared in four of the authorized watersheds.

The procedure presently followed provides for review and authorization at the Washington level of all subwatershed work plans which contain one or more structures with a total storage capacity equal to or in excess of 2,500 acre-feet or which propose assistance on any purpose other than flood prevention. Of the 33 subwatershed work plans prepared since the beginning of fiscal year 1962, only 9 contained structures with total storage capacities in excess of 2,500 acre-feet and only 2 of these proposed assistance for water management purposes which requires interagency and Bureau of the Budget review.

We point out that the present procedure is working smoothly under which the Secretary gives administrative approval to subwatershed work plans for each of the 11 watersheds that already are authorized by the Congress as he carries out programs for those watersheds.

As you know, the procedure set forth in the Watershed Protection and Flood Prevention Act, under which certain work plans require approval by resolutions adopted by appropriate committees of the Senate and House of Representatives also is working well.

This Department takes no position with regard to this proposed amendment and feels that it is a matter for the Congress to decide.

Subsection (c) of H.R. 9695 would provide that local sponsors may use Federal funds, other than those appropriated for the purposes of the Watershed Protection and Flood Prevention Act, to acquire such land rights as will be needed in connection with works of improvement to be installed with Federal assistance. This provision would permit local sponsors to take advantage of Federal funds available under other Federal programs, for which they might be eligible, to assist them in providing the necessary land rights. The inability of some local sponsors to assume the financial obligations of land rights along with their other obligations has been a significant constraint to the progress of the watershed program in low-income areas. As of December 31, 1963, authorized planning assistance had been suspended or terminated on 141 watersheds. This action was taken on 79, or 56 percent, of these applications because of local problems, one of the most significant of which is the acquisition of needed easements and rights-of-way.

Time has not been sufficient for the Bureau of the Budget to make a study of the full implications to warrant approval of this amendment. Therefore, it has recommended that this provision be deferred until the effect of this amendment on other Federal programs can be appraised and the full implications are known.

Subsection (d) of H.R. 9695 would provide that all watershed work plans now required to be transmitted to the Congress shall be so transmitted within 60 days after the Secretary reaches agreement on the plan with the local organization. This amendment would provide a more uniform flow of work plans through the approval process and,

in some instances, expedite their final approval. The Bureau of the Budget has advised that while it has no objection to the presentation of this statement, it believes that the 60-day requirement for the submission of project reports to the Congress contemplated by subsection (d) of H.R. 9695 would, in many cases, be unrealistic, considering the need for review of these projects by interested Federal agencies and the complexities and problems of coordination often incident to such review. The Bureau recommends, therefore, the retention of the provisions of the act with regard to transmittal of watershed work plans to the Congress.

Subsection (e) of H.R. 9695 would provide that any work plans involving municipal or industrial water supply or water quality control be reviewed by the Department of Health, Education, and Welfare. This amendment would require an action which the Secretary of Agriculture now is performing in accordance with interagency review procedures. The Department recommends that this amendment be enacted.

That concludes my formal statement, Mr. Chairman.

Mr. POAGE. Thank you very much, Mr. Williams.

Would you like to question the witness, Mr. Chairman?

Before that, we will make the attachments to your statement, Mr. Williams, a part of the record at this point.

(The document referred to follows:)

BRIEF HISTORY OF EFFORTS TO AMEND PUBLIC LAW 566 TO INCREASE THE
FLOODWATER DETENTION CAPACITY FROM 5,000 TO 12,500 ACRE-FEET

EIGHTY-SEVENTH CONGRESS

Bills introduced in the House leading to the Food and Agriculture Act of 1962 contained provision for amending Public Law 566 to increase the floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

The bill passed by the House contained the amendment to Public Law 566.

The Senate bill leading to the Food and Agriculture Act of 1962 did not contain provision to amend Public Law 566 to increase floodwater detention capacity.

Senator Ellender did not include the amendment to Public Law 566 since it had not been considered in the hearings.

Bill passed by the Senate did not include an amendment to Public Law 566 to change the floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

The conference committee agreed on a bill which did not contain the amendment. The conference bill was passed as the Food and Agriculture Act of 1962.

Other bills introduced in the 87th Congress to amend Public Law 566 to increase the 5,000 acre-feet limitation on floodwater detention capacity of structures.

S. 1875. Senator Young of North Dakota introduced this bill on May 16, 1961, to amend Public Law 566 by removing the 5,000 acre-feet limitation on floodwater detention capacity of structures.

S. 1904. Senator Burdick of North Dakota introduced this bill on May 17, 1961, to amend Public Law 566 by increasing the 5,000 acre-feet limitation on floodwater detention capacity to 10,000 acre-feet.

H.R. 7159. The late Congressman Nygaard of North Dakota introduced this bill on May 17, 1961, to amend Public Law 566 by removing the 5,000 acre-feet limitation on floodwater detention capacity of structures.

S. 3402. Senator Ellender of Louisiana (by request) introduced this bill on June 12, 1962, to amend Public Law 566 to increase the limitation on floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

The President's message to the Congress on January 31, 1963, on the agricultural program recommended that legislation be enacted to increase substantially the capacity for floodwater detention in small reservoirs in order to permit the full development, under the Watershed Protection and Flood Prevention Act, of available sites for multipurpose use.

EIGHTY-EIGHTH CONGRESS

Bills introduced to amend Public Law 566 to increase the floodwater detention capacity of structures.

H.R. 2904, by the late Congressman Nygaard, of North Dakota, introduced on January 28, 1963, would remove the 5,000 acre-feet limitation on detention storage in floodwater retarding structures.

S. 566, by Senator Burdick, of North Dakota, introduced on January 29, 1963, would change the limitation from 5,000 to 12,500 acre-feet. The Department of Agriculture strongly recommended enactment of the bill and testified in its favor.

H.R. 9695, by Congressman Poage, of Texas, introduced on January 21, 1964, would, among other things, change the limitation from 5,000 to 12,500 acre-feet.

The President's message to the Congress on agriculture, January 31, 1964, states:

"Much progress has been made under the Watershed Protection and Flood Prevention Act passed by the Congress 10 years ago. Watershed developments are now underway in more than 500 communities. Over 40 percent of these developments have multipurpose objectives, combining watershed protection and flood prevention with recreation, irrigation, fishing, and municipal water supply. These projects, though small, are of vital importance to rural areas. I recommend, therefore, that the Congress enact legislation to increase the project limitation of floodwater detention capacity from 5,000 to 12,500 acre-feet."

H.R. 9938 was introduced on February 7, 1964, by Congressman Cooley of North Carolina, to carry out the recommendation of the President to increase the floodwater detention capacity of structures constructed under the provisions of the Watershed Protection and Flood Prevention Act from 5,000 to 12,500 acre-feet.

H.R. 10096, introduced February 25, 1964, by Congressman Andrews of North Dakota to amend Public Law 566 to eliminate the 5,000 acre-feet limitation on detention storage in floodwater retarding structures.

Listing of some letters and resolutions in support of an amendment to the Watershed Protection and Flood Prevention Act to increase the floodwater-detention capacity of structures from 5,000 to 12,500 acre-feet:

1. Letter to Senator Ellender from the National Association of Soil and Water Conservation Districts, recommending enactment of S. 566 and urging Senator Ellender's Committee on Agriculture and Forestry to report favorably on S. 566.

2. Resolutions by a number of State associations of soil and water conservation districts endorsing S. 566 to increase the floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

3. Resolutions of the soil and water conservation districts of the south-central area of NACD (Texas, Louisiana, Oklahoma, and Arkansas) on July 9, 1963, strongly endorsing S. 566 and urging its enactment.

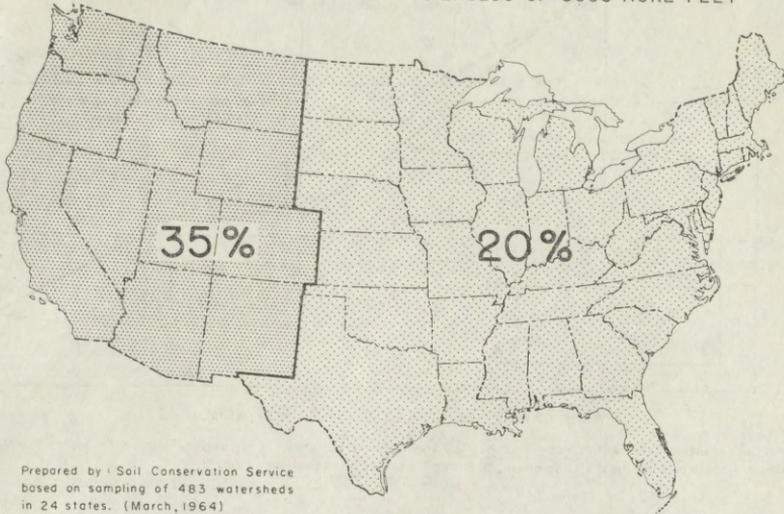
4. Letters from Byron Cook, chairman, Small Watersheds and Conservancy Districts Committee, OASWCD, and Ward Perryman, president, Oklahoma Association of Soil and Water Conservation Districts, April 17, 1963, to Senators Monroney and Edmondson and Congressmen Steed and Albert asking their assistance in amending Public Law 566 to increase the floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

5. Letter from Fred V. Heinkel, president, Missouri Farmers Association on April 23, 1963, stating that the association favors enactment of S. 566.

6. Letter from L. O. Fusilier, district attorney, Evangeline Parish, Ville Platee, La., to Senator Ellender stating the need for amending Public Law 566 to increase the floodwater detention capacity of structures from 5,000 to 12,500 acre-feet.

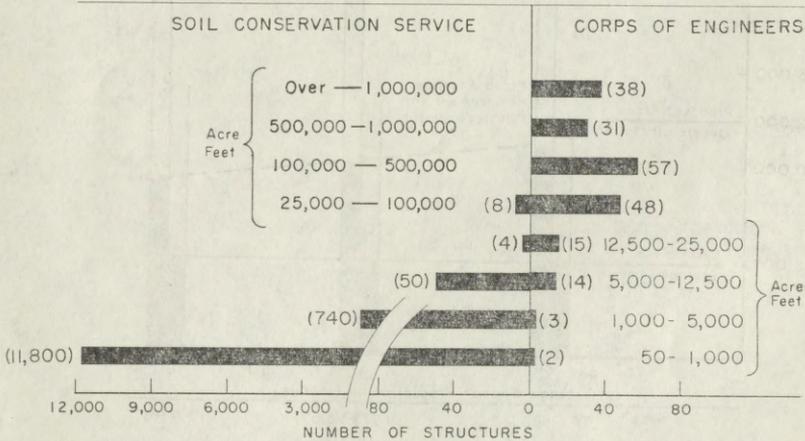
U. S. DEPARTMENT OF AGRICULTURE

ESTIMATED PERCENT OF PL-566 WATERSHEDS REQUIRING FLOODWATER DETENTION STORAGE IN EXCESS OF 5000 ACRE FEET



COMPARISON OF CAPACITY PROVIDED BY DAMS

DESIGNED OR CONSTRUCTED BY:

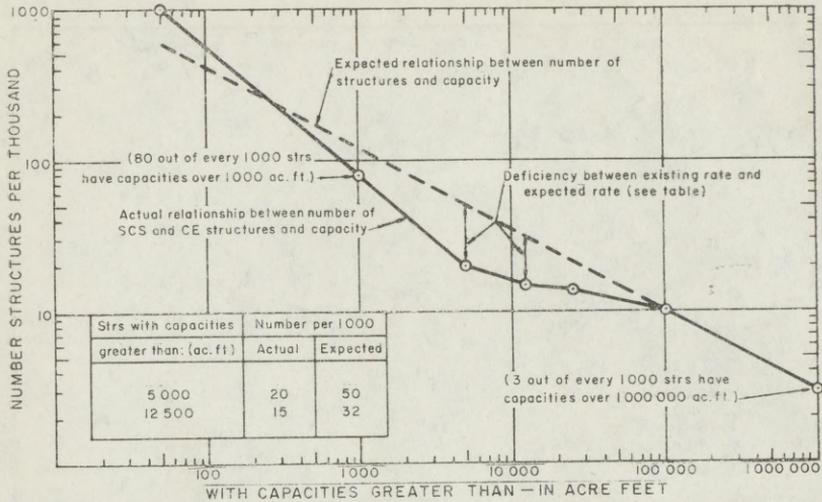


SOURCE:

Soil Conservation Service Records — Includes all dams completed, under construction, and contracted to March 1963. Annual Report of the Chief of Engineers, U.S. Army Civil Works Activities FY 1961.

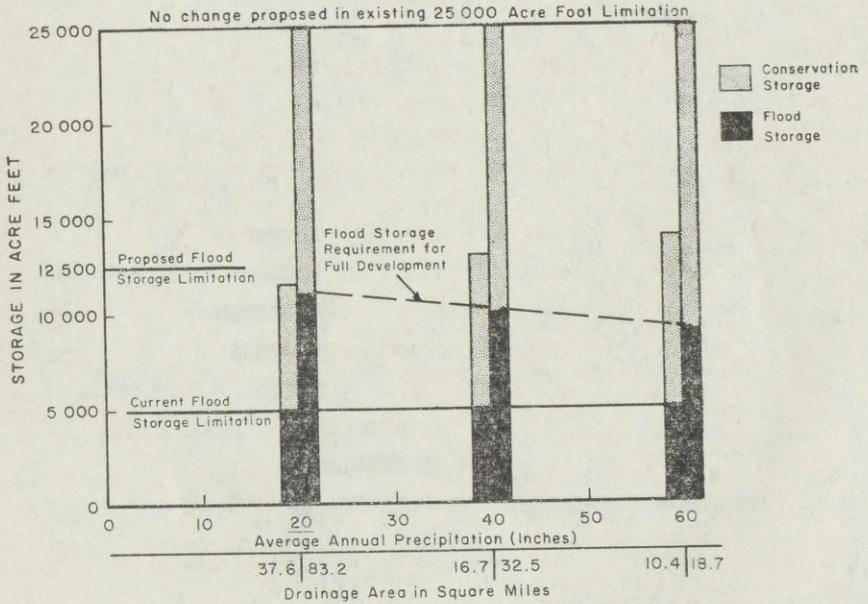
Prepared by: Soil Conservation Service

COMPARISON BETWEEN NUMBER AND THE CAPACITY OF DAMS

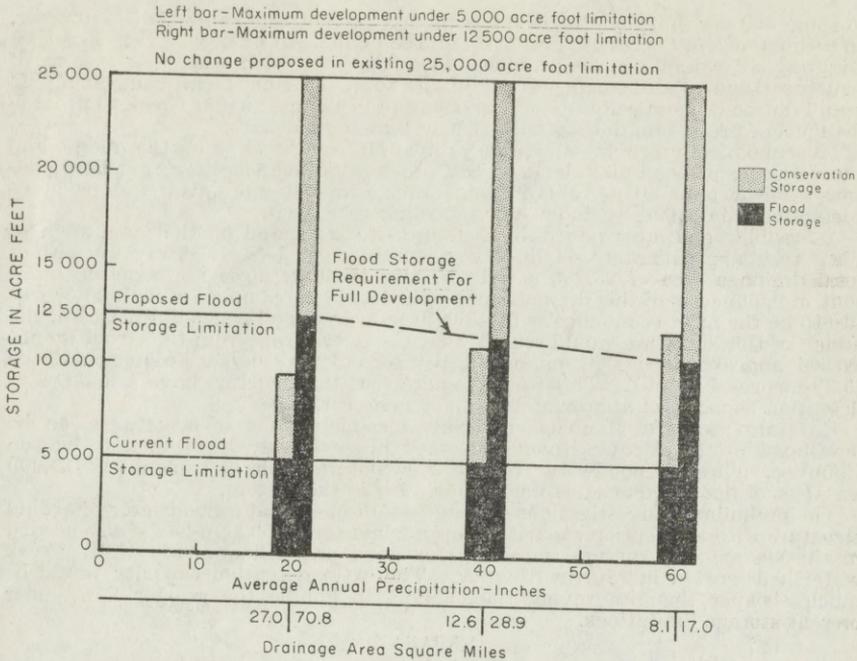


Source: Soil Conservation Service Records — Includes all dams completed, under construction, and contracted to March 1963. Annual Report of the Chief of Engineers, U.S. Army Civil Works Activities, FY 1961. Prepared by: SOIL CONSERVATION SERVICE 3/64

Left bar — Maximum development under 5 000 acre foot limitation
 Right bar — Maximum development under 12 500 acre foot limitation



APPROXIMATE PROPORTIONS OF A FULLY DEVELOPED MULTIPLE PURPOSE STRUCTURE (25 YEAR FREQUENCY DESIGN)



APPROXIMATE PROPORTION OF A FULLY DEVELOPED MULTIPLE PURPOSE STRUCTURE

(100 YEAR FREQUENCY DESIGN)

TYPICAL STATEMENTS FROM STATE CONSERVATIONISTS REGARDING THE 5,000 ACRE-FOOT LIMITATION OF FLOODWATER STORAGE

ALABAMA

One structure in the Cheaha Creek watershed in Clay, Talladega, and Cleburne Counties, could be designed for 10,045 acre-feet of storage. This would result in an estimated saving of \$101,480 by reducing the cost of the emergency spillway. This emergency spillway is in rock and will be very expensive to construct. The land downstream would also receive a higher degree of flood protection from the increased storage.

GEORGIA

We are in the final phase of assisting the sponsoring organizations prepare a watershed work plan for the Big Creek watershed, located in Cherokee, Forsyth, and Fulton Counties, Ga. To achieve the protection needed from floodwater damage, as agreed between the sponsors and the Service, would require the retention of 6,293 acre-feet of floodwater retarding storage below the crest of the emergency spillway. We will not be able to complete an economically feasible watershed work plan for this project unless the limitation of storing floodwater in a single structure is raised above the 5,000 acre-feet.

Big Creek watershed is an area of 66,952 acres. Big Creek originates in the west central portion of Forsyth County and flows in a southerly direction to its confluence with the Chattahoochee River near Roswell, Ga. Three large tributaries having a combined drainage area of approximately 23,000 acres (36 percent of the watershed) flow together above U.S. Highway 19 and form the main stem of Big Creek. Numerous tributaries enter the main stem from the east and west as it flows south through the Forsyth and Fulton County portions of the watershed.

It has been determined by investigations and analyses that to provide the level of protection desired by the local people it will be necessary to install land treatment measures in combination with floodwater retarding structures and channel improvement. A system of structures on the upper reaches of the three large tributaries above Highway 19 can be installed to provide adequate protection

to some 600 acres of flood plain lands in that area of the watershed. However, an estimated 1,700 acres of flood plain on the main stem of Big Creek below U.S. Highway 19 would not be provided adequate protection with this system of structures due to the small percent of the total drainage being controlled. It would not be economically feasible to enlarge the channel of Big Creek to provide the level of protection desired with this system of structures.

To economically provide adequate protection from flooding on the middle and lower reaches of flood plain land on Big Creek it will be necessary that the flood-flow from at least 50 percent of the drainage area of the entire watershed be adequately controlled by floodwater retarding structures.

A feasible floodwater retarding structure site is located on the main stem of Big Creek approximately 4,000 feet upstream from U.S. Highway 19 with a total drainage area of 23,253 acres. Of this amount, upstream structures will control 9,095 acres of this drainage area with 14,158 acres uncontrolled. For this site to be the most economically feasible in reducing flood peaks downstream, the design of this structure would require that the release rate from the structure not exceed approximately 600 cubic feet per second for 50-year frequency floods (5.29 inches of runoff). This would require that the structure have a floodwater detention capacity of approximately 6,300 acre-feet.

It is also doubtful if an economically feasible system of structures can be developed in the Alcovy River watershed in Gwinnett, Newton, and Walton Counties, unless a floodwater retarding structure with approximately 12,000 acre-feet of flood detention storage is included in the system.

The preliminary investigations and surveys disclose that a floodwater retarding structure with a detention capacity of approximately 6,500 acre-feet is also needed in the system of structural measures for flood prevention in the Holly Creek watershed located in Murray County. The extra detention capacity would be much cheaper than improving the channel to handle the greater flow under present storage limitations.

INDIANA

Effective control of the Upper and Lower Vernon Forks in Jennings, Ripley, Decatur, and Jackson Counties, will require structures storing somewhat over 5,000 acre-feet since tributary sites are rather poor. Similarly, protection for the main stem of Patoka River watershed will require that structures be placed in the lower reaches of the tributaries. At these locations, 5,000 acre-feet of floodwater detention would be too small for the size of the watershed above.

KANSAS

We have two instances to date where the 5,000-acre-foot limit is approached or reached. One of these is multiple-purpose reservoir No. 18-26 in the Twin Caney project. The storage limitation does impose limitations on design of the dam, in that the designer has no latitude in selecting the most desirable crest elevation for the emergency spillway by equating the cost of rock excavation against the cost of embankment for additional storage.

Another case is in Upper Verdigris watershed where an alternate location of dam 1-5 requires additional detention storage approaching 5,000 acre-feet. In this case the 5,000-acre storage did not preclude selection of a good site but it does illustrate that the storage limitation may preclude selection of the least costly watershed reservoir in specific instances.

KENTUCKY

In the Buck Creek watershed in Pulaski and Lincoln Counties, and in the South Fork Little River, in Christian County, the level of protection could have been improved by developing floodwater detention storage of approximately 7,000 acre-feet. It is anticipated that similar cases will develop in the rough topography of eastern Kentucky. Drainage of areas, larger than those presently feasible under the limitations of the act, must be controlled in order to justify flood prevention features in small watershed projects. It is our thought that this would enhance the opportunities of developing eligible projects in this economically distressed area which comprises one-fourth of the total land area of Kentucky.

LOUISIANA

Several watersheds in Louisiana have been studied to estimate the differences in cost with a limitation of 5,000 acre-feet of detention storage and a limitation of

12,500 acre-feet. The watersheds studied are the Upper Bayou Nezpique in Evangeline and Allen Parishes, and Bogue Lusa Creek in Washington Parish.

The upper Bayou Nezpique plan has been approved for operations; however, the local organizations have requested an amendment to the work plan. The Bogue Lusa Creek watershed is now being planned.

Based on these preliminary estimates, it is concluded that a considerable savings could be affected, both to the Federal Government and to the local sponsors, if the maximum allowable flood storage was 12,500 acre-feet.

An estimated \$1,691,000 will be needed to apply the structural measures to be included in the plan presently being considered on Bogue Lusa Creek watershed. We believe the same degree of protection could be provided for \$1,358,300 if the larger amount of flood storage could be provided in any given structure. Of the \$332,700 savings, \$287,500 would be to Public Law 566 funds and \$45,200 would be to local funds.

Should the present work plan on Bayou Nezpique to be revised in line with recent discussions with the local sponsors, it is estimated that \$4,276,900 would be needed to apply the structural measures. The same benefits could be obtained for a total cost of \$3,888,800 if the maximum allowable flood storage was 12,500 acre-feet. This \$388,100 savings would be \$298,500 in Public Law 566 funds and \$89,600 local funds.

MAINE

The limitation of 5,000 acre-feet of flood detention storage will make it necessary to plan two structures in series on the north branch of Presque Isle Stream watershed in Aroostook County. The lower site has ample capacity for full development and could be developed at a savings of approximately \$40,100.

MICHIGAN

At the present time an application has been submitted amending the original application on the Tiffin River-Bean Creek watershed between Michigan and Ohio. It is known that there is a potential storage site on Bean Creek in Lenawee County, Mich., which has an indicated storage capacity of approximately 20,000 acre-feet. Undoubtedly, if this site proves economically feasible for development, there would be a need for utilizing more than 5,000 acre-feet of storage capacity.

MINNESOTA

The present limitation has not affected any floodwater retarding structure in any of the watershed projects on which we have worked to date. The south Zumbro watershed, located in Olmsted and Dodge Counties, Minn., will have two structures which will be affected by this limitation. This new watershed application was just recently approved by the State committee. During our field examination, two structure sites were located with drainage areas of 42 and 51 square miles. A much higher degree of protection could be provided by these two proposed structure sites if the acre-feet of detention storage was increased. This would be very desirable as Rochester, Minn., a community of 30,000 people, is located on the flood plain below these two sites. Rochester experienced a very serious flood this past summer, and the people are very interested in this watershed project.

MISSISSIPPI

A review of work plans completed as well as conditions in watersheds to be planned this year indicates that in the following six watersheds in Mississippi, more efficient programs could be developed if the 5,000-acre-foot limitation was removed:

1. Lower Tippah River (FP)—Benton, Marshall, Tippah Counties

In this subwatershed, one structure is needed on Chewalla Creek at a point where the drainage area is approximately 20,000 acres. The work plan provides for a structure with a drainage area of 10,259 acres, which is located some 4 miles upstream. The lower site would be twice as effective with less than 50 percent increase in cost. On Snow Creek, a tributary of the lower Tippah River, one large structure with a drainage area of about 28,000 acres could replace three structures. At both these sites, the area is wooded, and the easements would be easier to secure than for the sites planned.

2. *Black Creek (FP)—Carroll and Holmes Counties*

In the Black Creek work plan, the sponsors requested the planning party to study two sites for large floodwater retarding structures. One of these sites was located on Fannegusha Creek just above Mississippi Highway 12, with a drainage area of approximately 64,000 acres. The work plan now provides for 10 structures above this site. The other site was on Harlan Creek with a drainage area of 15,431 acres. The planning party located a structure upstream that is within the 5,000-acre-foot limitation.

3. *Second Creek (Public Law 566)—Adams County*

Had not the 5,000-acre-foot limitation been in effect, the planning party would have planned only one structure at the upper end of Second Creek, instead of three. This would have resulted in a saving of approximately \$80,000.

4. *Coldwater River (FP)—DeSoto, Marshall, and Benton Counties*

This work plan on this watershed has not been completed. The sponsors were interested in a large structure in a wooded section of the upper Coldwater River, with a drainage area of 30,000 acres. Since this site would have storage beyond the 5,000-acre-foot limitation, several smaller structures must be considered.

5. *Big Sand Creek (FP)—Carroll, Leflore, Montgomery Counties*

The Big Sand Creek subwatershed is now being planned. One structure located in lower Teoc Creek, which is a part of the Big Sand Creek project, would provide protection to the delta from this 21,000-acre watershed.

6. *Tallahaga Creek (Public Law 566)—Winston County*

This watershed has not been authorized for planning but will be planned in the near future. In the upper limits of the watershed, one large structure is being considered which may exceed the 5,000-acre-foot limitation. Three small structures to replace this one would cost approximately \$60,000 more than the one large structure.

NORTH CAROLINA

In Crabtree Creek watershed in Durham and Wake Counties, the most economical series of floodwater retarding structures within the limitation of 12,500 acre-feet of floodwater storage will cost \$302,194 less than the similar group under present limitations. Structure No. 25 would be increased in size and 4 of the other 14 structures would be eliminated.

If the limitation would be raised to 12,500 acre-feet, savings could also be effected in upper French Broad watershed in Transylvania and Henderson Counties, and in the Town Fork Creek watershed in Stokes and Forsyth Counties.

NORTH DAKOTA

The most feasible storage site in the north branch Park River watershed requires a flood prevention storage capacity of about 9,500 acre-feet. This site might be developed as a multiple-purpose site if it could be included in the project. The exclusion of this site would result in higher costs to provide the level of protection desired by the sponsoring local organization.

A proposed structure in the south branch Park River watershed is designed for 5,000 acre-feet of floodwater storage. It could be relocated downstream to a desirable site if the 5,000-acre-foot limitation was eliminated. It is also probable that additional storage for other purposes would be incorporated.

The middle south branch of Forest River watershed is approved for operations. It is necessary to change the location of one of the proposed structures because of the construction of a missile complex. If the site is moved upstream it will be necessary to build two structures. If the 5,000-acre-foot limitation in floodwater storage could be exceeded, we could move downstream and build one structure at a substantial saving.

The need to provide storage above 5,000 acre-feet is also anticipated in the Square Butte, Butte Creek, and Charbonneau watersheds.

OKLAHOMA

Why amend Public Law 566 to raise the maximum flood detention capacity to 12,500 acre-feet?

1. Permit the local sponsors and the SCS to plan the best project to meet the goals within a 250,000-acre watershed.

Objectives are to shoot for a high level of floodwater protection: (1) Most protection to the most area, (2) inundate the least amount of good bottomland, (3) enough protection for best use of bottomland, (4) reduce flood hazards to no greater than other hazards, and (5) obtain this with the least total cost (Federal and local). Goals are also to provide enough storage for irrigation, fish and wildlife, recreation, and municipal use.

Although goals to include, for example, 80 percent reduction in flood damages are set by sponsors, these goals cannot be reached on some watersheds due to the 5,000 acre-foot limitation. The economic justification of the entire system of structures may depend on the cost (Federal and local) of one site.

2. Flood prevention plans developed on the Washita included five reservoirs with more than 5,000 acre-feet. These structures help meet goals and help point out the need.

3. Usually not more than one or two sites per watershed with floodwater detention storage of 5,000 to 12,500 acre-feet of storage are needed.

(a) On the Washita when there were no limitations, the work plans developed called for only 2 percent of the sites to exceed 5,000 acre-feet.

(b) Under Public Law 566 when 591 structures were planned, only 13, or 2.2 percent exceeded 4,000 acre-feet.

4. Applications on hand which should be planned with one or more structures exceeding 5,000 acre-feet are: Black Fork, Skeleton, Caston, Norwood, Muddy Boggy, Turkey, Hominy, Upper Bird, and Little River.

OREGON

We find that the 5,000-acre-foot limitation has not been a restriction on reservoirs included in work plans developed to date. However, when we look at the watersheds now being planned and the reservoir developments in other watersheds on which we now have applications, we feel that the 5,000-acre-foot limitation is not realistic and will restrict the operation and in many instances prohibit the most effective control of floodwater.

SOUTH CAROLINA

To date we have had one reservoir in each of two different watersheds authorized for planning where flood storage greater than 5,000 acre-feet was needed. In addition, on the basis of a field examination of Rabon Creek, located in Greenville and Laurens Counties, we are reasonably sure that the work plan, when developed, should provide for two structures that would exceed 5,000 acre-feet of flood storage. Again, based on the field examination, we think that the work plan for the Pacolet River watershed in Spartanburg, Greenville, Polk, and Henderson Counties, when developed, would contain at least one structure with over 5,000 acre-feet of flood storage.

TEXAS

A field examination of Cherry and Madera Canyon watersheds in Jeff Davis and Reeves Counties was made in 1960 under the 5,000 acre-foot floodwater storage limitation. In 1963, a reexamination of the two watersheds, without consideration of the 5,000 acre-foot limitation, provided the following data:

Estimated annual benefits and cost

Cherry Canyon.—Drainage area: 329 square miles. Original field examination (1960). Based on not more than 5,000 acre-feet of floodwater detention capacity. Required structural measures: six floodwater retarding structures plus 15 miles of channel improvement.

Benefits.....	\$85,000
Cost.....	\$136,000
Benefit-cost ratio.....	0.63:1

Reexamination (1963). Based on more than 5,000 acre-feet of floodwater detention capacity. Required structural measures: three floodwater retarding structures plus 18 miles floodway.

Benefits.....	\$95,367
Cost.....	\$72,323
Benefit-cost ratio.....	1.32:1

Madera Canyon.—Drainage area: 279 square miles. Original field examination (1960). Based on not more than 5,000 acre-feet of floodwater detention capacity. Required structural measures: five floodwater retarding structures.

Benefits.....	\$37,700
Cost.....	\$92,000
Benefit-cost ratio.....	0.41:1

Reexamination (1963). Based on more than 5,000 acre-feet of floodwater detention capacity. Required structural measures: three floodwater retarding structures.

Benefits.....	\$47,984
Cost.....	\$40,000
Benefit-cost ratio.....	1.20:1

Estimated detention capacity requirements

Cherry Canyon.—Drainage area: 329 square miles. Original field examination (1960). Based on not more than 5,000 acre-feet of floodwater detention capacity

Site No.	Drainage area (square miles)	Detention capacity (acre-feet)
1.....	34	3,944
2.....	30	3,600
3.....	30	3,600
4.....	19	2,337
5.....	22	2,662
6.....	16	1,904
Total.....	151	18,047

Reexamination (1963): Based on more than 5,000 acre-feet of floodwater detention capacity.

Site No.	Drainage area (square miles)	Detention capacity (acre-feet)
1. Original site 6.....	16	1,904
2. Downstream from original sites 1 and 2.....	87	9,570
3. Original site 5 includes drainage area of original sites 3, 4, and 5.....	71	7,952
Total.....	174	19,426

Madera Canyon.—Drainage area: 279 square miles. Original field examination (1960): Based on not more than 5,000 acre-feet of floodwater detention capacity.

Site No.	Drainage area (square miles)	Detention capacity (acre-feet)
1.....	37	4,255
2.....	40	4,600
3.....	38	4,370
4.....	25	3,025
5.....	32	3,840
Total.....	172	20,090

Reexamination (1963): Based on more than 5,000 acre-feet of floodwater detention capacity.

Site No.	Drainage area (square miles)	Detention capacity (acre-feet)
1. Same as original site 1.....	37	4,255
2. Includes original sites 2 and 4.....	65	7,410
3. Includes original sites 3 and 5.....	70	7,840
Total.....	172	19,505

There are very few cases where increasing the limitation would be advantageous, but in those few instances where additional storage capacity is needed, considerable savings can be effected by going to the larger sites. Only seven floodwater retarding structures with detention capacity in excess of 5,000 acre-feet were constructed in Texas before the 5,000-acre-foot limitation went into effect. So far, there are eight watersheds where some saving would have been or will be possible if the limitation were set at 12,500 acre-feet. The following is typical of the conditions in these eight watersheds:

Watershed No. 4.—Eliminate four planned sites where the cost of detention storage is \$53.20 per acre-foot. Install one site with approximately 11,700 acre-feet of floodwater detention capacity at the confluence of the two streams on which the upper four sites are located. The cost of storing at this location would be about \$46 per acre-foot. It is estimated that the Public Law 566 cost to build the floodwater retarding structure at the alternate location would be about \$37,000 cheaper than to build the four sites as planned. The sponsors could save approximately \$600 per year by having three less floodwater retarding structures to maintain and the benefits to the project would be slightly greater.

Watershed No. 5.—Eliminate four sites which cost an average of \$43 per acre-foot. Construct one site in lieu of the four planned with approximately 9,000 acre-feet of floodwater detention capacity. It is estimated that storage could be obtained at this location at a total cost of \$36 per acre-foot. A site at this location would provide a higher level of flood protection for less cost. The land which would be involved in the pool areas at this location has a lower value than some of the land in the upper sites.

Watershed No. 7.—This is a proposed multiple-purpose site to include municipal water supply and recreation for a city. Basic hydrologic data have not been developed for this site, but it is estimated that a 7,200 acre-foot capacity is needed to store the class (b) detention requirement for this site. The total drainage area of the site is 14,260 acres.

UTAH

We have not yet encountered a need to increase floodwater detention capacity to 12,500 acre-feet to contain summer storm floodwater. However, on the American Fork-Dry Creek watershed in Utah County, and the North Fork of Ogden watershed in Weber County, the present limitation prevented even considering storage for snowmelt flood runoff.

On the North Fork of Ogden, storage capacity to regulate snowmelt for 1 month of peak flows from approximately 15,000 acres would need to be in excess of 7,000 acre-feet. This same capacity would be required on the American Fork Creek of the American Fork-Dry Creek watershed.

WASHINGTON

Many of the watersheds in Washington flood in the spring as a result of winter accumulations of snow in the higher areas. Most rainfall and snows occur during winter months. Sites where reservoirs with floodwater detention capacity in excess of 5,000 acre-feet would be desirable may fit into two categories:

1. Flood runoff from melting snow frequently has a duration of several weeks with only moderate fluctuation. Damage prevention requires sufficient capacity to reduce regulated runoff for extended periods with little relief by short-term depletion of storage. Storage requirements are therefore relatively high for even moderate regulation.

2. Good sites are relatively scarce in the majority of watersheds. Where a good site exists, it should be utilized to its maximum justifiable extent in the in-

terests of economy in lieu of developing additional sites to accomplish the same degree of regulation. The additional cost of developing added sites may rule out damage prevention by storage and cause the consequent substitution of channel improvements as the more practical alternative.

Specific watersheds where the need has been found for detention storage in excess of 5,000 acre-feet are:

1. South Fork and lower Willapa watershed, Pacific County.
2. Mill Creek watershed, Stevens County.
3. Little Pend Oreille River, Stevens County.
4. Chewelah Creek watershed, Stevens County.
5. Klickitat Creek watershed, Klickitat County.
6. Rock Lake in the Palouse-Rock Lake district, Whitman County.

WISCONSIN

We have a new application for the Pine River watershed, Richland County, where according to the task force, one site will no doubt require detention capacity in excess of 5,000 acre-feet.

We also anticipate a need for more than 5,000 acre-feet in new projects in the future.

PUERTO RICO

The Bajura watershed is very mountainous. One site was investigated which was the key to the entire flood protection system and which required storage in excess of 5,000 acre-feet to provide the most economical development.

Preliminary data on the Maunabo watershed indicates the need for flood storage in excess of 5,000 acre-feet because of the lack of economical sites farther upstream. The most desirable site would require 5,520 acre-feet of flood storage and would incorporate water for municipal and irrigation water supply.

Mr. COOLEY. Mr. Williams, you mentioned the local problem in acquiring lands, rights-of-way, and the like. What are the actual problems involved there?

Mr. D. A. WILLIAMS. Mr. Cooley, the problem in some of the more distressed or low-income areas of the country, such as some of the Appalachian area, as an example, where the income of the people and the tax base is very low, is that they have found it difficult to proceed with some of the community improvements that they would need to proceed with in order to carry out the program which would help with employment and help with community betterment. If they have to acquire the rights-of-way entirely at non-Federal expense, that is the principal reference here.

Mr. COOLEY. Do you think that consideration should be given authorizing the acquisition of land under the rights of eminent domain in some instances?

Mr. D. A. WILLIAMS. I would not believe, Mr. Chairman, that the Federal Government should acquire any lands under the small watershed program in the name of the Federal Government. As you know, there is a provision under the amendment to the Food and Agricultural Act of 1962 in which the Department of Agriculture may share with the local organization some of the costs of acquiring some of the land and the rights-of-way for recreation purposes, and that purpose only, but the acquisition of the title remains in the hands of the local people.

Mr. POAGE. May I point out, Mr. Williams, that the law in many States does allow acquisition by eminent domain.

Mr. D. A. WILLIAMS. That is correct.

Mr. POAGE. And the determination of whether or not you can use the right of eminent domain for acquisition of land depends on the State law. In the State of Texas, if you create the right kind of

district, you may do so, but otherwise you cannot do it. It depends upon the power of the district granted by the legislature.

Mr. COOLEY. Suppose that you exercise the right of eminent domain to acquire it under the State law, what about the cost involved—who puts up the money?

Mr. POAGE. As he pointed out, normally, the local people have to put up the money, but there are certain recreational provisions whereby the Federal Government puts up one-half of the money. As I see it, the real problem has been that as you increase the size of the reservation, their cost will become far more expensive, Mr. Chairman, and not only more expensive, but they tend to take more of individual lands. If you only have 300 acres of land, and they are going to put a reservoir out there to cover 1,200 acres of land and they take all of your land or they take 200 acres of your 300 acres, you are certainly not going to give them the land. On the other hand, the original concept of the bill was that you would be putting in reservoirs that might cover 10 or 15 acres. And you might have a farm with 200 or 300 acres, and you might be glad to have this reservoir on your land, and you would give the rights-of-way without any cost. And to a great degree that has been true in this situation, they have acquired these rights-of-way without any expense, but as you get to these larger reservoirs, you are taking a substantial portion of an individual's farm, and when you do, it becomes almost impossible to get them to give the land.

Mr. COOLEY. How many acres are involved in these?

Mr. POAGE. I would suppose that it would depend entirely upon the project. You could have 5,000 or 6,000 acres in it. Or you might have only 500 acres.

Dr. D. A. WILLIAMS. The acreage covered, of course, varies very greatly with the topography, as has been suggested. In the State of Louisiana, wherein you have a limitation on acre-feet, because of the very flat topography, a very small dam would cover a lot of surface acreage. I do not remember the exact number in a specific case.

I might comment further with respect to the question, on the right of eminent domain, that there is a very significant variation, of course, among the States with respect to the provisions of State law. As an example, the State of Oklahoma several years ago enacted State legislation to provide authority in that State to the soil conservation districts to exercise the right of eminent domain with respect to this problem, and the State actually provided a revolving fund. The State appropriated funds to help back that up. Now the very fact that they have the right of eminent domain, their experience has been that they have not had to use it very much, because they could use it if they had to; therefore, they have been in a position better to be able to negotiate with the landowners without having to use the eminent domain authority. There would be a very great variation on that.

Mr. COOLEY. To build all of these big dams for flood control, the Federal Government pays the entire cost; does it not?

Mr. D. A. WILLIAMS. Yes; the public works program of the Corps of Engineers, especially, Mr. Chairman.

Mr. COOLEY. And you acquire that land and you do exercise the right of eminent domain?

Mr. D. A. WILLIAMS. That is the Federal Government.

Mr. COOLEY. All right. My question is, Why should it not be possible to give—to have the right of eminent domain to secure land for flood prevention projects? As Mr. Poage pointed out, if I have a farm and I want the reservoir, and it is a small acreage, I might be willing to donate the land. But suppose you have a situation where you actually need more land, and the landowners are not willing to give the property, could you not consider then the advisability of moving into the right of eminent domain on that?

Mr. D. A. WILLIAMS. I do not in any way speak against the idea of using the right of eminent domain. My only comment is the question of whether or not it should be the Federal Government or the State or local governments. In my judgment, there is a distinct difference between a small watershed program, under Public Law 566, which is not a Federal program as such, but it is a local program with Federal assistance. I think there is a difference between that concept and the concept of the major developments on the major streams being Federal projects.

I will agree that when you get to talking about an individual structure covering so many acres and taking the land, there is the question of equity which arises as to whether or not in one instance, perhaps, with a thousand acres in a larger structure, as against 200 acres in a smaller structure, is equitable or inequitable, to do it one way or to do it the other way.

I appreciate the point. And it is a very difficult point for us to answer many times.

Mr. POAGE. Will you yield?

Mr. COOLEY. Yes.

Mr. POAGE. I think that it has been pointed out, it has been the strongly held viewpoint of this subcommittee that we should maintain the requirement of local payment for all rights-of-ways; that we did that on the basis, as has been pointed out, that these are locally owned, that they are not owned by the Federal Government; that we want to keep them a local unit and that it is something that the local people should do.

Mr. COOLEY. May I interrupt?

Mr. POAGE. Yes. I just wanted to have his opinion on this.

Mr. COOLEY. I know. I was trying to tell you what the subcommittee felt. I did not want you to feel that these people were doing this. It was the subcommittee that felt that way, that is, Mr. Chairman, it was felt that to let the Federal Government pay for the cost of the rights-of-way would increase the cost of this program two or three-fold. We think that the local people can always buy these rights-of-way far cheaper than the Federal Government can buy them, and in most cases they can get them without cost. I recognize that when we get to these bigger dams we are faced with a much different problem and we may have to, if we raise this limit, very well have to review our position on the payments for the rights-of-way, because it becomes a more difficult problem when you get to the larger dams.

Mr. D. A. WILLIAMS. It would seem to me that if the time comes for such a reconsideration some thought should be given to the possibility of the State or the local unit of government, which has the authority of the right of eminent domain, exercising that authority with, perhaps, some degree of financial participation by the Federal Government, rather than the Federal Government acquiring the property.

Mr. JOHNSON of Wisconsin. Could not the cost of the land be more than the cost of the dam?

Mr. D. A. WILLIAMS. I am not sure. Hollis, would you answer that?

Mr. JOHNSON of Wisconsin. If the cost of the land is going to run much higher, one might offset the other.

Mr. D. A. WILLIAMS. Let me make a preliminary statement here. You would have this situation, as you get into the heavily populated areas and I am thinking right now of a situation in Connecticut in which it is a rural area, but the values of land are extremely high and up there the cost of the land acquisition has been underwritten by the State government, instead of the local township or the local county government and you have a situation there in which the cost of the land and the rights-of-way, in order to have them under public control, have equaled, I think in some cases, all of the other costs of the projects. So that you have a very great variation as between that and, say, in my home State of South Dakota where some parts of the land values are still not high. Maybe Hollis would like to supplement that.

Mr. HOLLIS WILLIAMS. Congressman Poage and Chairman Cooley and members of the subcommittee, with your permission, based on informal discussions I have had with this subcommittee, I would like to isolate what I consider the issue by an example.

First, we are all clear that the present law, Public Law 566, does not let the local sponsoring organization, the improvement district, use any Public Law 566 funds, or other Federal funds for the purchase of lands, easements and rights-of-way; and as Mr. Poage pointed out we are all clear that that is the situation and we abide by it.

Now, we had this case arise, Mr. Cooley. Out at Waldron, Ark., we had a Public Law 566 project underway, cooperating with the local sponsors, that would provide for three purposes: one, flood protection to agricultural lands; two, municipal water supply development; and, third, recreation development.

We were seven-eighths through the development of that plan with cooperative efforts by both the rural and urban people for a total project. There was passed by the Congress the Area Redevelopment Act which made it possible for municipalities to get grants, and while we were in the middle of that project or about seven-eighths completed the city made an application for a 100 percent grant and had a tentative commitment. The proposal was referred to the Department of Agriculture for comment. We determined that that single act would render the proposed project not feasible. The city said, "Since we can get 100 percent grant for the municipal water supply development, we will pull out."

I do not have to go through all of the explanation, except to say that through the efforts of the congressional delegation and many people involved it was finally decided that the city of Waldron would get an 80-percent grant and a 20-percent loan. And that they would use the 20-percent loan to help buy the lands, easements and rights-of-way.

Under Public Law 566 they could not use any other Federal funds for the purchase of land rights. What we propose for your consideration is that if a sponsoring organization can get funds from ARA or under the coordination of the Fish and Wildlife Act or under the

Johnson-Dingell Act or some other source that is legitimate and proper for sponsoring a project, would you permit them to use other Federal funds, not Public Law 566 funds, in the acquisition of lands, easements and rights of way?

It is clear in here that we are not amending Public Law 566 to use any Public Law 566 appropriated funds for the purchase of lands, easements and rights-of-way. That is the issue.

Mr. COOLEY. In other words, what do you think should be done about it?

Mr. HOLLIS WILLIAMS. We have recommended in here, I think, that it is a good thing.

Mr. COOLEY. You mean that you already have your opinion?

Mr. HOLLIS WILLIAMS. I just think that it is wrong to deny the local sponsors, if they manage in some coordinated legal way to get funds from some other source, to penalize them so that they cannot use those funds in their efforts in a Public Law 566 program.

Mr. COOLEY. Mr. Poage has pointed out to you our views in the past which have guided this committee.

Mr. JOHNSON of Wisconsin. Would not this organization try to get these funds and thereby hold up the project?

Mr. COOLEY. That is what Mr. Poage had in mind.

Mr. POAGE. There is one thing, we have been convinced that whenever the Government pays for rights-of-way that the Government is going to pay substantially more than the local people would pay, but what Mr. Hollis Williams has said, if I understand it correctly, is that if these people can pay for it with the money that they get from some source other than from Public Law 566 funds, that we are not going to look to the source of those funds beyond the question that we still would prohibit them from using any funds that they get under Public Law 566—that they could not use any of these funds for the purpose of buying rights-of-way, but if they got some other money by some other method that we are not going to question whether they got it through a grant or whether they got it from the Ford Foundation or how they got it.

Mr. HOLLIS WILLIAMS. That is right.

Mr. POAGE. We are not going to look beyond our own bill here. We do think that we have an obligation to see that they do not use Public Law 566 funds for that purpose. And this would still prohibit them from using Public Law 566 funds.

Mr. HARVEY of Indiana. Let me say this, if I may: I concur in that view. I have followed this program very carefully ever since it was inaugurated. And I think that the line of reasoning that Mr. Poage has indicated here is logical. I feel that we are going to have a lot more of this type of program where we preclude a municipality from getting funds other than from their own tax resources to comply with these requirements, and that you are going automatically to preclude them from participating in the program. And the thing that concerns me particularly is that in doing so that we will sometime in the future do an injustice to these communities who will not be able to participate and will very definitely need the potentialities of such a site for their own purposes.

I would like to ask one question, I think, which is relative to this, because the point has come to my attention—I do not know whether it is covered in this proposal or not—of a project that is coming from

my own district, in fact, which involves in addition to the municipal water supply, probably, more important than the municipal water supply, the need for a storage capacity to increase the amount of flowage in the low season for the benefit of the sewage systems of the areas involved. Is that covered in this bill?

Mr. D. A. WILLIAMS. Mr. Harvey, it is not covered in the bill.

Mr. HARVEY of Indiana. I just have had this one instance come to my attention, and it has been brought to the attention by the local officials to the State officials that such a purpose should be included on the basis of equal importance.

Mr. D. A. WILLIAMS. We have had a number of indications of such interests, including some from some of the public health officials in the States. It is my opinion that that item is worthy of some very serious consideration.

So far as the present proposal here is concerned it has not been proposed and it has not been cleared within the executive branch.

Mr. HARVEY of Indiana. To your knowledge would you know of any objection to such a proposal?

Mr. D. A. WILLIAMS. I would not know of any objections, sir. There might be some, but I do not know where it would come from.

Mr. HARVEY of Indiana. Could I ask you this: Would you in an informal way explore this thought?

Mr. D. A. WILLIAMS. I will be happy to do so.

Mr. HARVEY of Indiana. And report back to us on it?

Mr. D. A. WILLIAMS. I will be glad to do so.

(The information requested follows:)

Storage for water quality control may be included in watershed projects on the same basis as storage for municipal or industrial water supply. Local organizations must bear all costs for these purposes but may obtain a loan from the Farmers Home Administration under section 8 of Public Law 566, as amended, to help them finance such costs. The loan must be repaid no later than 50 years after the principal benefits first begin. The interest rate varies from year to year in accordance with the formula prescribed in the act. For fiscal year 1964 it amounts to 3.046 percent.

Mr. COOLEY. You point out on page 7 of your statement:

As of December 31, 1963, authorized planning assistance has been suspended or terminated on 141 watersheds. This action was taken on 79, or 56 percent, of these applications because of local problems, one of the most significant of which is the acquisition of needed easements and rights-of-way.

That seems to present a problem that we ought to deal with in some way. You just abandoned work on these 141 projects because they presented this problem, and we should be able to deal with the problem in some way. I do not know whether the Federal Government should move in or how it should be done.

Mr. JOHNSON of Wisconsin. Could you not solve the problem by lending them the money?

Mr. D. A. WILLIAMS. The act now provides for authority for loaning money through the loan provision for the various purposes, including this, so that there is presently authority for a loan. But those loans are financed out of the appropriations for Public Law 566.

Mr. JOHNSON of Wisconsin. Could not these people get loans?

Mr. D. A. WILLIAMS. In some cases you would have a situation, Mr. Johnson, where the security for such a loan, in terms of the general economy of the area, might be in question.

Mr. POAGE. Another problem is that in some States there are State laws which allow the districts to borrow money and in some States it does not. In some places they can borrow the money and in other places they cannot.

Mr. D. A. WILLIAMS. That is right. So it is a matter of the State constitution that has to be corrected.

Mr. COOLEY. As to these 141 watershed projects that you have abandoned work on, what do you think should be done on those in those instances?

Mr. D. A. WILLIAMS. I want to make it clear that on the 141 watersheds in which the planning assistance was suspended there are a good many reasons. One of the reasons is that the local people just lost interest and did not want to go ahead, but I do not know the exact number. But it is something less than 56 percent, I suppose, that would be caused by the rights-of-way question.

If for all reasons this is a good desirable community project, and if this rights-of-way problem is standing in the way of local people proceeding with a desirable project that will help their economy and the area, it would seem to me that, perhaps, in certain sections of the country that are in a distressed condition that, perhaps, there might be some exception made in which some degree of grant might be considered for the acquisition of the rights-of-way. The property would still be in the hands of the local people, but I would question whether it should be made a general provision.

Mr. POAGE. May I interrupt right there. I feel that you are now creating a problem that to me seems to be very unsound so that I want this record to show that I object to it, whether anybody else does or not.

Mr. D. A. WILLIAMS. May I make it clear?

Mr. POAGE. This proposition that you are suggesting in certain areas that they should be given privileges and in certain other areas that they should be denied them simply does not appeal to me. That is the trouble with this ARA program over the United States. Certain congressional districts can get tremendous grants and other congressional districts, where they have individual and specific communities that are in just as bad shape, cannot get one dime out of it. To me it is the most unfair proposition that has been palmed off on the American people, and so far as I am concerned you are not going to get to first base coming here and suggesting that certain areas ought to be able to get these grants and that other areas should not be able to get them. I am willing to set up a criteria in each instance. Certainly, I am willing to apply the same criteria all over the United States. And if this district meets the criteria, fine; if it does not, they do not get it because I see them exactly alike on each side of the mountain.

Mr. D. A. WILLIAMS. And may I comment further? I believe that the record will show that I was not recommending this, but rather saying that this is something that might receive some consideration as a possibility of a direct response to Mr. Cooley. The chairman is aware that there have been proposals made for some special programs. ARA is but one example. It may have been made to fit certain sections of the country because of the poverty situations, and so on.

If something like this were to be done that would be, I suppose, somewhat consistent with that approach, rather than the one that you just enunciated.

Mr. JOHNSON of Wisconsin. Of these 141 projects that have been abandoned, how many of them were approved by the Congress?

Mr. D. A. WILLIAMS. None of these were approved—they were all in the planning stage.

Mr. JOHNSON of Wisconsin. These were in the planning stages?

Mr. D. A. WILLIAMS. That is correct. It was found before they completed their plans in some instances that they were not economically sound and in some cases that they were not engineeringly sound and in some cases the local people found that they just could not proceed with meeting the obligations that they would have to meet.

Mr. HOLLIS WILLIAMS. To supplement the administrator's statement, since I have the day-to-day experience with this, let me say that a high percentage of those involve public utility lines. For example, in Oklahoma when we started our preliminary investigations and studies, the local people ascertained, at one stage or another, that they have a serious problem with respect to public utility relocations, and that the cost is high, or they determine, after the potential sites for structures are partially located, that there is going to be extensive removal of farm buildings or highway removals or replacements and other things, and the local sponsors just decide not to go further with the project. This condition constitutes a high percentage of these suspensions and terminations before we spend very much planning money.

Mr. JOHNSON of Wisconsin. In my district I have had some projects that went pretty well along, but they found out that they could not meet the expenses. And it had nothing to do with whether they were financially able to go ahead with them.

Mr. HOLLIS WILLIAMS. Yes.

Mr. POAGE. Would you explain just the effect of the bill that I introduced? Maybe I am prejudiced as to some of the effects of it. I would like to know frankly the effect of this bill on this committee and on the Committee on Public Works. As I understand it, we do not change the jurisdiction between these committees. Perhaps, probably, you will have a very much larger extent of these projects going into the Public Works Committee if this legislation is passed.

Mr. D. A. WILLIAMS. There might be a few more, but, Mr. Chairman, I do not believe that there will be any very substantial proportion, because, generally speaking, right now if you are in an area where the topography is suitable and the problem needs to be met, that is, there is need for a considerable amount of storage, they are already going above the 4,000 acre-feet, and sometimes up to 5,000 acre-feet, I do not believe the additional flood detention storage would swing many additional projects over into the category of consideration by the Public Works Committee. So as I would see it, by and large, with respect to jurisdiction, with respect to the committee, it would be just about the same—there would not be any significant shift.

Mr. HOLLIS WILLIAMS. We would feel that there would be a very small percentage.

Mr. POAGE. I think that was brought up some time ago.

Mr. COOLEY. Why do not more projects come to this committee from these districts?

Mr. POAGE. Because if the project involves a reservoir of more than 4,000 acre-feet it presently goes to the Public Works Committee and not to this committee. And I would just assume that if there were more projects with large reservoirs in them that they would go to the Public Works Committee, that they would be substantially increased. I have had assurance from the department that it would not be a serious matter.

Mr. D. A. WILLIAMS. I think, Mr. Chairman, that we would have a very distinct obligation to see that the program did not go in the direction of moving too far toward larger structures, but—and that in a specific case where the needs could better be met with the general interests of the public and cost to the Federal Government—that this would be the exceptional proposition rather than the rule, that the larger storage would be used. That would be my thinking, and my intent in carrying it out.

Mr. POAGE. May I ask you this off the record?

(Discussion off the record.)

Mr. POAGE. On the record.

Mr. COOLEY. How many of these watershed projects have we approved in the past under Public Law 566?

Mr. HOLLIS WILLIAMS. About 500.

Mr. COOLEY. Could you get a list of those up for us for the record?

Mr. HOLLIS WILLIAMS. Yes, sir.

Mr. COOLEY. The number of projects and the number of acres—get us an estimate as to the number of acres involved.

Mr. HOLLIS WILLIAMS. I must correct that. The total is 500. Part of them are administratively approved whenever they do not exceed \$250,000, but I will be glad to supply that for the record.

(The information requested follows:)

Number of projects approved, 545.

Number of acres in approved projects, 31,426,793.

The following lists show projects (1) approved by Agriculture Committees, (2) approved by Public Works Committees, and (3) approved administratively.

WATERSHED PROTECTION, PUBLIC LAW 566

Projects approved by Agriculture Committees (224 projects)

State and project	Area in acres	County
Alabama:		
Crowdabout Creek.....	31,705	Morgan, Lawrence, and Cullman.
High Pine Creek.....	51,530	Chambers and Randolph.
Little Paint Creek.....	35,600	Jackson and Marshall.
Powell Creek.....	42,350	Hale and Marengo.
Arizona: Buckhorn-Mesa.....	69,172	Maricopa and Pinal.
Arkansas:		
Big Creek.....	72,966	Craighead and Greene.
Caney Creek.....	39,680	Cross.
Crooked Bayou.....	31,499	Chicot.
Grady-Gould.....	48,832	Desha, Jefferson, and Lincoln.
Mud Creek.....	18,345	Independence.
Tupelo Bayou.....	25,880	Faulkner.
California:		
Adobe Creek.....	21,500	Lake.
Buena Vista Creek.....	8,970	San Diego.
Central Sonoma.....	50,000	Sonoma.
Escondido Creek.....	30,900	San Diego.
Napa River.....	135,000	Napa.
Ulatris Creek.....	96,800	Solano.

Projects approved by Agriculture Committees (224 projects)—Continued

State and project	Area in acres	County
Colorado:		
Big Sandy Creek and supplement.....	219,000	Elbert and El Paso.
Franktown Parker tributaries of Cherry Creek.....	176,640	Elbert, Douglas, and El Paso.
Indian Wash.....	9,640	Mesa.
Vineland area tributary to Arkansas River.....	11,110	Pueblo.
Connecticut:		
Blackberry River, Conn. and Mass.....	29,548	Litchfield, Conn., and Berkshire, Mass.
Furnace Branch of Middle River, Conn. and Mass.....	33,326	Tolland, Conn., and Hampden, Mass.
North Branch of Park River.....	17,536	Hartford.
South Branch of Park River.....	30,080	Do.
Delaware: Upper Nanticoke River.....		
	119,775	Sussex and Kent.
Florida:		
Istokopoga Marsh.....	26,200	Highlands.
Jumper Creek.....	53,000	Sumter.
Sarasota, west coast.....	154,680	Sarasota and Manatee.
South Sumter.....	54,700	Sumter.
Taylor Creek.....	89,500	Okeechobee.
Upper Josephine-Jackson Creek.....	32,700	Highlands.
Upper Tampa Bay.....	65,720	Hillsborough, Pasco, and Pinellas.
Georgia:		
Fishing Creek.....	41,000	Baldwin and Jones.
Little Satilla Creek.....	109,500	Appling and Wayne.
Little Tallapoosa River.....	62,516	Carroll and Haralson.
Mill Creek.....	32,604	Walker and Whitfield.
North Broad River.....	46,470	Franklin, Hart, and Stephens.
Potato Creek.....	154,000	Pike, Lamar, Spalding, and Upson.
Rocky Comfort Creek.....	51,300	Warren and Glascock.
Sandy Creek.....	21,000	Madison and Jackson.
Hawaii:		
Naalehu.....	2,620	Hawaii.
Puukapu.....	9,970	Do.
Waianae Iki.....	11,650	Honolulu.
Waianae Nui.....	19,110	Do.
Illinois:		
Hog River-Pig Creek.....	3,250	St. Clair.
Little Cache Creek.....	45,000	Johnson.
Scattering Fork.....	73,158	Champaign, Douglas, and Coles.
Indiana:		
Boggs Creek.....	40,800	Martin.
Busseron.....	153,280	Sullivan, Vigo, Green, and Clay.
French Lick Creek.....	21,880	Orange.
Lattas Creek.....	35,780	Greene.
Prairie Creek.....	88,690	Daviess and Martin.
Stucker Fork.....	117,850	Scott, Jefferson, Clark, and Washington.
Iowa:		
Badger Creek.....	34,346	Dallas, Madison, and Warren.
Big Park.....	7,674	Crawford.
Big Wyacondah.....	36,275	Davis.
Crooked Creek.....	22,656	Audubon, Cass, and Guthrie.
David's Creek.....	39,294	Audubon and Guthrie.
Davis Battle Creek.....	4,770	Monona.
Held.....	7,420	Plymouth.
Indian Creek.....	9,792	Pottawattamie.
Mill Picayune.....	62,994	Shelby, Harrison, and Crawford.
Pony Creek.....	19,329	Mills and Pottawattamie.
Ryan-Henschall.....	9,410	Pottawattamie.
Kansas:		
Bee Creek.....	45,360	Chautauqua and Montgomery.
Frog Creek.....	22,496	Coffey and Osage.
Grant and Shanghai Creeks.....	25,200	Chautauqua.
Little Walnut Hickory.....	171,510	Butler and Greenwood.
Middle Caney.....	100,210	Chautauqua and Elk.
Silver Creek.....	18,418	Chase.
Walnut Creek, Kans. and Nebr.....	80,594	Brown, Kans., and Richardson, Nebr.
White Clay, Brewery Whiskey Creeks.....	12,540	Atchison.
Kentucky:		
Big Muddy Creek.....	65,140	Butler and Logan.
Big Reedy Creek.....	26,390	Butler, Edmonson, and Grayson.
Caney Creek.....	97,310	Butler, Grayson, and Ohio.
Canoe Creek.....	76,643	Henderson.
Crab Orchard.....	96,893	Union and Webster.
Donaldson Creek.....	47,010	Caldwell and Crittenden.
East Fork of Clarks River, Ky. and Tenn.....	201,441	Calloway, Marshall, Graves, and McCracken, Ky., and Henry, Tenn.
East Fork of Pond River.....	139,700	Christian, Muhlenberg, and Todd.
Humphrey-Clanton Creek.....	68,547	Ballard and McCracken.
Little Kentucky River.....	45,600	Henry and Trimble.
North Fork of Little River.....	37,611	Christian.
Obion Creek.....	206,108	Hickman, Graves, Fulton, and Carlisle.
West Fork of Clarks River.....	148,640	Calloway, Marshall, Graves, and McCracken.
West Fork of Pond River.....	52,900	Christian and Hopkins.

Projects approved by Agriculture Committees (224 projects)—Continued

State and project	Area in acres	County
Louisiana: Bayou Folse	52,214	Lafourche.
Maryland:		
Gilbert Run	28,622	Charles and St. Marys.
Little Youghogheny River	26,275	Garrett.
Long Marsh	27,363	Queen Annes and Caroline.
Massachusetts:		
Bradley Brook	6,970	Hampden.
Broad Brook	7,578	Hampshire and Hampden.
Clam River	20,065	Berkshire.
SuAsCo	241,617	Middlesex and Worcester.
Upper Quaboag River	94,301	Worcester, Hampden, and Hampshire.
Michigan:		
North Branch of Mill Creek	46,547	Lapeer, St. Clair, and Sanilac.
South Branch of Cass River	93,620	Sanilac and Lapeer.
Minnesota:		
Crooked Creek	44,560	Houston.
Joe River	54,960	Kittson.
Mississippi:		
Beasha Creek	35,603	Neshoba and Leake.
Bentonia	24,404	Yazoo.
Chiwapa Creek	101,328	Pontotoc, Monroe, and Lee.
Ellison Creek	19,150	Yazoo.
Gray's Creek	23,638	Benton.
Muddy Creek, Miss. and Tenn.	80,795	Tippah, Miss., and Hardeman, Tenn.
Mulberry Creek	27,494	Montgomery.
Persimmon-Burnt Corn Creek	33,018	Madison.
Tallahalla Creek	47,593	Hinds.
Upper Bogue Phalia	219,351	Bolivar and Washington.
West Hatchie	47,874	Tippah and Alcorn.
Missouri:		
Callahan Creek	22,170	Boone.
Panther Creek	22,035	Harrison.
South Fork of Blackwater River	65,579	Johnson.
Tabo Creek	84,895	Lafayette.
Nebraska:		
Antelope Creek	107,072	Sheridan and Cherry.
Bear-Pierce-Cedar	76,800	Gage.
Bellwood	51,300	Butler.
Big Indian Creek	131,700	Jefferson and Gage.
Bowman-Spring Branch	22,850	Thayer.
Gering Valley	57,600	Scotts Bluff.
Mud Creek	38,872	Gage.
Plum Creek	4,700	Gage and Pawnee.
Wilson Creek	77,900	Cass and Otoe.
Nevada: Peavine Mountain	6,300	Washoe.
New Hampshire: Souhegan River, N.H. and Mass.	109,440	Hillsborough, N.H., and Middlesex, Mass.
New Mexico:		
Apache-Brazito-Mesquite	39,660	Dona Ana.
Santa Cruz River	117,184	Rio Arriba, Santa Fe, and Mora.
Tortugas Arroyo	15,584	Dona Ana.
Upper Gila Valley Arroyos	27,000	Grant.
Zuber Draw	115,840	Chavez.
New York:		
Conewango Creek	190,080	Cattaraugus and Chautauqua.
Cowaselon Creek	69,000	Madison.
Ischua Creek	74,900	Cattaraugus.
North Carolina:		
Abbotts Creek	115,300	Davidson, Forsyth, Randolph, and Guilford.
Ahoskie Creek	48,150	Hertford, Northampton, and Bertie.
Conetoe Creek	64,139	Edgecombe, Martin, and Pitt.
Deep Creek	75,300	Yadkin.
Gum Neck	7,450	Tyrrell.
Mud Creek	71,850	Henderson.
Muddy Creek	64,000	McDowell and Burke.
North Dakota:		
Lower Forest River	192,385	Walsh.
North Branch of Forest River	107,014	Do.
Swan-Buffalo Creek	203,520	Cass.
Tewaukon, N. Dak. and S. Dak.	83,782	Sargent, N. Dak., and Marshall, S. Dak.
Wild Rice Creek, N. Dak. and S. Dak.	233,522	Do.
Ohio:		
Chippewa Creek	120,320	Wayne, Medina, Summit, and Stark.
Dick's Creek-Little Muddy Creek	44,592	Butler and Warren.
Marsh Run	20,006	Huron, Crawford, and Richland.
Upper Wabash	80,540	Darke and Mercer.
Oklahoma:		
Bear, Fall, and Coon Creeks	120,960	Lincoln, Oklahoma, and Logan.
Big Wewoka Creek	172,525	Seminole, Potawatomie, and Hughes.
Cane Creek	101,755	Okmulgee and Muskogee.
Caney Creek	30,541	Atoka and Bryan.
Halkey Creek	24,872	Tulsa.
Little Deep Fork Creek	167,423	Creek, Lincoln and Okmulgee.
Little Wewoka Creek-Graves Creek	122,445	Hughes, Seminole, and Okfuskee.
Salt Creek	152,000	Pottawatomie and Seminole.
Timber Creek	41,700	Beckham and Roger Mills.

Projects approved by Agriculture Committees (224 projects)—Continued

State and project	Area in acres	County
Oklahoma—Continued		
Tricounty Turkey Creek	196, 400	Jackson, Harmon, and Greer.
Upper Red Rock Creek	197, 376	Garfield, Noble, Kay, and Grant.
Wagon Creek	36, 900	Alfalfa, Grant, and Garfield.
Waterfall-Gilford Creek	43, 410	McCurtain.
Oregon:		
Little Puding River	36, 246	Marion.
Middle Fork of Hood River	40, 500	Hood River.
Willakenzie Area	16, 700	Lane.
Pennsylvania:		
Briar Creek	9, 344	Columbia and Luzerne.
Brodhead Creek	18, 624	Monroe and Pike.
Dunlap Creek	10, 590	Fayette.
Greene-Dreher	47, 810	Wayne, Pike and Monroe.
Kaercher Creek	3, 220	Berks.
Little Shenango	72, 738	Mercer and Crawford.
Marsh Creek	52, 940	Tioga.
Mill Creek	8, 430	Do.
Puerto Rico:		
Anasco River	129, 128	Adjuntos, Anasco, Lares, Los Marios, Maricao, Mayaguez, and San Sebastian.
Bajura	91, 174	Cabo Rojo, Hormigueros, Mayagues, Las Marias, Maricao, San German, and Sabana Grande.
South Carolina:		
Duncan Creek	52, 858	Laurens.
Huff Creek	21, 787	Greenville.
South Dakota: Upper Little Minnesota River.	37, 000	Marshall and Roberts.
Tennessee:		
Bear Creek	31, 500	Haywood, Fayette, and Hardeman.
Cane Creek	57, 000	Lauderdale.
Cypress Creek	25, 870	Weakley.
Hardin Creek	62, 900	Wayne and Hardin.
Houser Creek	21, 490	Obion.
Indian Creek, Tennessee and Mississippi.	22, 000	Fayette and Hardeman, Tenn., and Benton, Miss.
Jennings Creek	46, 150	Jackson, Clay, and Macon.
Line Creek, Tennessee and Kentucky.	40, 330	Clay and Macon, Tenn., and Monroe, Ky.
Mulberry Creek	63, 900	Lincoln and Moore.
Pine Creek	16, 800	Scott.
Porters Creek, Tennessee and Mississippi.	44, 600	Hardeman, Tenn., and Benton and Tippah, Miss.
Weatherford-Bear Creek	32, 775	Wayne.
Texas:		
Auds Creek	31, 670	Lamar.
Caney Creek	46, 784	Fannin and Grayson.
Cummins Creek	204, 896	Lee, Fayette, Austin, and Colorado.
East Keechie	63, 770	Palo Pinto, Jack, and Parker.
Johnsons Draw	101, 760	Crockett.
Kent Creek	27, 008	Briscoe and Hall.
Kickapoo Creek	40, 732	Coke.
Knob Creek	23, 870	Bell.
Lower Brushy Creek	138, 240	Williamson and Milam.
Martinez Creek	56, 000	Bexar.
Noian Creek	73, 600	Bell and Coryell.
Northeast tributaries of Leon River	202, 880	Comanche, Erath, and Eastland.
Upper Brushy Creek	191, 360	Williamson.
York Creek	93, 824	Gaudalupe, Comal, and Hays.
Utah:		
American Fork of Dry Creek	118, 710	Utah.
Blue Creek-Howell	115, 500	Box Elder.
Vermont: Neshobe River	13, 000	Rutland and Addison.
Virginia:		
Beaver Creek	7, 010	Albemarle.
Buffalo Creek	74, 700	Prince Edward.
Johns Creek	65, 000	Craig and Giles.
Leatherwood Creek	43, 800	Henry and Franklin.
Washington:		
French Creek	18, 414	Snohomish.
Lacamas Creek tributaries	13, 972	Clark.
Marshland	14, 006	Snohomish.
West Virginia:		
Brush Creek	22, 293	Mercer.
Polk Creek	7, 280	Lewis.
Saltlick Creek	31, 683	Braxton.
Upper Deckers	19, 940	Preston and Mongalia.
Wisconsin:		
Bad Axe	132, 000	Vernon.
Coon Creek	92, 589	LaCrosse, Monroe, and Vernon.
Glen Hills	36, 000	St. Croix and Dunn.
Mill Creek	39, 096	Richland.
West Fork of Kickapoo	64, 170	Monroe and Vernon.

Projects approved by Public Works Committees (95 projects)

State and project	Area in acres	County
Alabama:		
Big Nance Creek.....	118, 925	Lawrence.
Big Prairie-French Creeks.....	180, 192	Hale, Perry, and Marengo.
Cheaha Creek.....	72, 934	Clay, Cleburne, and Talladega.
Hurricane Creek.....	45, 566	Madison and Jackson.
Mill Creek.....	6, 790	Elmore and Autauga.
Terrapin Creek, Ala. and Ga.....	183, 675	Cherokee, Calhoun, and Cleburne, Ala., and Haralson and Polk, Ga.
Town Creek.....	161, 000	Colbert, Franklin, and Lawrence.
Arizona:		
Apache Junction-Gilbert.....	89, 983	Maricopa and Pinal.
Florence area.....	55, 702	Pinal.
Frye Creek-Stockton Wash.....	153, 714	Graham.
Magma.....	70, 064	Pinal.
Williams-Chandler.....	154, 976	Maricopa and Pinal.
Arkansas:		
East Fork of Point Remove Creek.....	87, 865	Conway and Van Buren.
Flat Creek.....	24, 050	Lawrence.
Muddy Fork of Illinois River.....	47, 122	Washington.
Poteau River, Ark. and Okla.....	187, 460	Scott, Ark., and LeFlore, Okla.
West Fork of Point Remove Creek.....	201, 312	Conway, Pope, and Van Buren.
California: Marsh-Kellogg Creek.....	116, 420	Contra Costa and Alameda.
Georgia:		
Bull Creek.....	44, 531	Harris and Muscogee.
Marbury Creek.....	16, 394	Barrow and Oconee.
Middle Fork of Broad River.....	50, 829	Banks, Habersham, Stephens, and Franklin.
Middle Oconee-Walnut Creek.....	91, 700	Hall and Jackson.
South River.....	59, 875	Clarke and Madison.
Tobesofkee Creek.....	137, 029	Bibb, Lamar, and Monroe.
Illinois:		
Big Blue.....	26, 690	Pike.
Seven Mile Creek.....	18, 460	Jefferson.
Shoal Creek.....	192, 355	Montgomery.
Indiana: Middle Fork of Anderson River.....	69, 400	Perry and Crawford.
Kansas:		
Big Caney, Kans. and Okla.....	228, 000	Chautauqua, Elk, Cowley, and Osage.
Fall River.....	200, 001	Greenwood, Butler, and Chase.
Twin Caney.....	98, 370	Chautauqua, Elk, and Montgomery.
Upper Verdigris.....	210, 860	Coffee, Greenwood, Lyon, Chase, and Woodson.
Kentucky:		
Beaver Creek.....	43, 848	Barren and Metcalfe.
Buck Creek.....	76, 862	Lincoln and Pulaski.
Mud River.....	240, 033	Butler, Logan, Todd, and Muhlenberg.
Louisiana:		
Bayou Rapides.....	96, 970	Rapides.
Upper Bayou Nezpique.....	214, 157	Allen and Evangeline.
Maryland: Upper Rock Creek.....	38, 765	Montgomery.
Michigan: Misteguay Creek.....	103, 961	Saginaw, Shiawassee, and Genessee.
Mississippi:		
Chuquatonchee Creek.....	136, 849	Chickasaw, Pontotoc, Clay, and Monroe.
Second Creek.....	69, 056	Adams.
Town Creek.....	246, 957	Lee, Pontotoc, Union, and Prentiss.
Montana:		
Box Elder Creek.....	14, 285	Sheridan.
Lower Willow Creek.....	71, 200	Granite.
New Hampshire: Baker River.....	136, 900	Grafton.
New Mexico: Tramperos Creek.....	136, 320	Union and Harding.
North Carolina: Town Fork Creek.....	84, 521	Stokes and Forsyth.
North Dakota:		
Elm River.....	221, 696	Traill, Steele, and Cass.
Middle and South Branch of Forest River.....	219, 520	Grand Forks, Nelson, and Walsh.
Ohio: Rush Creek.....	151, 462	Fairfield, Hocking, and Perry.
Oklahoma:		
Caney-Coon Creek.....	23, 571	Coal.
Cottonwood Creek.....	242, 470	Logan, Oklahoma, Canadian, and Kingfisher.
Delaware Creek.....	50, 016	Atoka, Coal, Johnston, and Pontotoc.
Fourche Maline Creek.....	175, 360	Latimer and LeFlore.
Leader-Middle Clear Boggy Creek.....	107, 968	Pontotoc and Coal.
Lower Clear Boggy Creek.....	240, 301	Atoka, Bryan, Coal, and Johnston.
Sallisaw Creek.....	185, 280	Sequoyah, Adair, and Cherokee.
Salt-Camp Creek.....	73, 030	Creek and Lincoln.
Sandy Creek.....	147, 243	Garvin and Pontotoc.
Stillwater Creek.....	177, 216	Payne, Noble, and Logan.
Upper Black Bear Creek.....	241, 546	Garfield, Noble, and Pawnee.
Upper Blue River.....	203, 100	Atoka, Bryan, Johnson, Murray, and Pontotoc.
Upper Clear Boggy Creek.....	162, 240	Pontotoc, Coal, and Johnston.
Whitegrass-Waterhole Creek.....	29, 575	McCurtain.
Oregon: Beaver Creek.....	19, 940	Marion.

Projects approved by Public Works Committees (95 projects)—Continued

State and project	Area in acres	County
Pennsylvania:		
Brandywine Creek, Pa. and Del.	211,200	Chester, Lancaster, and Delaware, Pa., and New Castle, Del.
Little Schuylkill River	86,848	Schuylkill, Carbon, and Berks.
Mill Run	7,814	Crawford.
Sandy Creek	42,000	Crawford and Mercer.
Puerto Rico: Guayanes River	31,700	Yabucoa.
South Carolina: Thicketty Creek	74,640	Cherokee and Spartanburg.
South Dakota: Brule Creek	142,720	Lincoln and Union.
Tennessee:		
Lick Creek	168,392	Greene and Washington.
Middle Fork of Obion River	74,025	Henry and Weakley.
Reelfoot-Indian Creek, Tenn. and Ky.	82,660	Obion, Tenn., and Fulton, Ky.
Texas:		
Alamo Arroyo	83,603	Hudspeth.
Camp Rice Arroyo	31,405	Do.
Chilpin-San Fernando Creek	215,740	Duval, Jim Wells, Nueces, and Kleberg.
Diablo Arroyo	40,992	Hudspeth.
Dry Devils River and Lowrey Draw	149,120	Schleicher and Sutton.
Lower Plum Creek	152,900	Hays and Caldwell.
Omitos-Garcias Creek	99,840	Starr.
Pine Creek	119,040	Lamar.
Plum Creek	97,000	Hays, Caldwell, and Travis.
Salado Creek	139,808	Bexar.
San Diego-Rosita Creeks	222,450	Duval and Jim Wells.
Sulphur Creek	85,120	Burnet and Lampasas.
Tehuacana Creek	196,480	McLennon, Hill, and Limestone.
Upper Bosque	235,520	Erath, Hamilton, and Bosque.
Upper Lake Fork Creek	145,472	Hopkins, Rains, and Hunt.
Valley Creek	150,464	Runnels, Taylor, and Nolan.
Virginia: Roanoke Creek	141,900	Charlotte.
Wisconsin: Twin Parks	78,620	Iowa.
Wyoming:		
Boulder Lake	99,961	Sublette.
North Fork of Powder River	193,557	Johnson.

Projects approved administratively (226 projects)

Alabama:		
Brackin's Mill Creek	3,400	Dale and Coffee.
Bristow's Creek	16,608	Etowah.
Clear Creek	11,800	Jackson.
Little New River	32,506	Marion and Fayette.
Lost Creek, Ala. and Ga.	17,139	Cleburne, Ala., and Carroll, Ga.
Arkansas:		
Arkansas City	16,143	Desha.
Camp Bayou	21,756	Ashley.
Chicot, Desha, and Drew	41,227	Chicot, Desha, and Drew.
Fourche Bayou	14,322	Pulaski.
Kelso-Rohwer	26,895	Desha.
Ouachita Creek	4,250	Perry.
Randolph-Walnut Lake	13,564	Desha.
Upper Culotches Bay	38,969	Woodruff and Prairie.
California: Arroyo Grande	103,400	San Luis Obispo.
Colorado:		
Coalbank	24,000	Weld and Larimer.
Fishers Peak-Carbon Arroyos	1,470	Las Animas.
Limon	9,870	Elbert and Lincoln.
Roatcap	10,642	Montrose.
West Cherry Creek	31,360	Douglas and El Paso.
Wray	2,386	Yuma.
Connecticut:		
Roaring Brook-Walnut Street Brook	5,070	Hartford.
Spaulding Pond Brook	850	Mew London.
Delaware: Bear Hole	4,523	Sussex.
Florida:		
Fisheating Creek Marsh	51,200	Highlands.
Lake Placid East Chain of Lakes	12,500	Do.
North St. Lucie River Drainage District	60,220	St. Lucie.
Pine Barren Creek, Fla. and Ala.	61,600	Escambia (Fla. and Ala.
Sebastian River Drainage District	33,930	Indian River.
Georgia:		
Barber Creek	26,899	Barrow and Oconee.
Bear Creek	23,324	Newton and Jasper.
Bishop Creek	27,840	Appling and Jeff Davis.
Haynes Creek-Brushy Fork Creek	20,000	Rockdale, Gwinnett, and Walton.
Hazel Creek	19,560	Habersham.
Head of Little Tennessee River, Ga. and N.C.	36,693	Rabun, Ga., and Macon, N.C.
Hightower Creek	22,950	Towns.

Projects approved administratively (226 projects)—Continued

State and project	Area in acres	County
Georgia—Continued		
Palmetto Creek.....	13, 450	Harris.
Rocky Creek.....	20, 700	Wilkes.
Rooty Creek.....	29, 483	Putnam.
Sautee Creek.....	20, 000	White and Habersham.
Idaho:		
Cedar Creek, Idaho and Nev.....	126, 720	Twin Falls and Owyhee, Idaho, and Elko, Nev.
Cow Creek-Dobson Creek.....	17, 700	Boundary.
Fourth of July Creek.....	17, 100	Kootenai.
Illinois:		
Hambaugh-Martin.....	8, 601	Brown.
Tiskilwa.....	3, 300	Bureau.
Indiana:		
Dewitt Creek.....	9, 000	Lawrence.
Elk Creek.....	18, 020	Washington.
Kickapoo Creek.....	24, 700	Warren.
Little Wea Creek.....	11, 960	Tippecanoe.
West Creek, Ind. and Ill.....	36, 086	Lake, Ind., and Kankakee and Will, Ill.
Iowa:		
Bee-Jay.....	16, 920	Pottawatomie.
English Bench.....	4, 720	Allamakee.
Hamburg.....	2, 365	Fremont.
Harmony Creek.....	3, 100	Harrison.
Hound Dog Creek.....	5, 580	Fremont.
Moulton.....	7, 275	Appanoose.
Pierce Creek.....	3, 812	Page.
Rocky Branch Creek.....	8, 663	Jefferson.
Simpson Creek.....	2, 393	Fremont.
South Hungerford No. 2.....	2, 765	Plymouth.
Stennett Red Oak Creek.....	9, 547	Montgomery.
Kansas:		
Andale.....	16, 421	Sedgwick and Reno.
Cimarron Watershed District.....	6, 440	Gray.
Nebo Creek.....	9, 360	Jackson, Atchison, and Jefferson.
Spring Creek.....	27, 840	Sedgwick, and Reno
Thompsonville.....	4, 062	Jefferson.
Kentucky:		
Cypress Creek.....	32, 424	Union.
Meadow Creek.....	9, 862	Wayne.
Short Creek.....	24, 300	Grayson.
Twin Creek.....	17, 418	Harrison.
Louisiana:		
Baker Canal.....	21, 600	Assumption.
Bayou Blue.....	81, 840	Allen and Jefferson Davis.
Bayou Dupont.....	57, 610	Natchitoches and Sabine.
Bear Creek.....	20, 400	Allen and Beauregard.
North Tensas.....	186, 072	Tensas.
Pleasant Valley, Big Ditch, and Scarboroughs Creek.....	11, 800	Washington.
Upper West Fork of Cypress Bayou.....	5, 550	Bossier.
Maine: Libby Brook.....	18, 568	Aroostook.
Maryland:		
Aydelotte.....	12, 470	Wicomico.
Little Deer Creek.....	10, 112	Harford.
Ninepin Branch.....	6, 300	Worcester.
Timmonstown Branch.....	8, 655	Do.
Massachusetts:		
Baiting Brook.....	2, 182	Middlesex.
Powdermill Brook.....	12, 825	Hampden and Hampshire.
Michigan:		
Fowlerville Drain.....	1, 465	Livingston.
Little Black River.....	17, 130	Cheboygan.
Little River.....	37, 973	Menominee.
Middle Branch of Cass River.....	48, 672	Sanilac.
Muskrat Creek.....	7, 654	Clinton.
Sanborn.....	4, 230	Alpena.
Minnesota:		
Bear Valley.....	29, 326	Wabasha and Goodhue.
Coon Creek.....	55, 276	Anoka.
Middle Fork of Two Rivers.....	57, 276	Kittson.
North Branch of Two Rivers.....	234, 223	Kittson and Roseau.
Rush-Pine Creek.....	88, 050	Fillmore, Houston, and Winoma.
Zippel.....	51, 964	Lake of the Woods.
Mississippi:		
Buck Island Bayou.....	27, 820	Tunica.
Central Bogue Phalia.....	64, 778	Bolivar and Washington.
Shammack Creek.....	10, 574	Kemper.
Tackett Creek.....	8, 850	Holmes.
Upper Quiver River and Blue Lake.....	58, 087	Tallahatchie.

Projects approved administratively (226 projects)—Continued

State and project	Area in acres	County
Missouri:		
East Fork of Big Creek, Mo. and Iowa	52,084	Harrison, Mo., and Decatur, Iowa.
Hoover-Frankum	18,307	Nodaway.
One Hundred and Two River tributaries.	19,301	Do.
Platte River tributaries	12,800	Worth.
Nebraska:		
Buckley Creek	25,380	Jefferson and Thayer.
Cure Creek	860	Keith.
Dorchester	5,327	Saline.
Dry Creek South	22,810	Red Willow.
Jones	4,964	Polk.
Oak-Middle Creek	230,699	Lancaster, Seward, Saunders, and Butler.
Pilger	4,700	Stanton and Cuming.
Plattsmouth	2,465	Cass.
Turtle Creek	2,000	Sarpy.
Wildhorse	26,000	Morrill.
Nevada:		
Upper Meadow Valley Wash	175,000	Lincoln.
Virgin Valley	27,400	Clark and Lincoln, Nev., and Mohave, Ariz.
New Hampshire:		
Ash Swamp, Tannery, White, and Black Brooks.	12,800	Cheshire.
Oliverian Brook	9,860	Grafton.
New Jersey:		
Paulins Kill	109,440	Warren and Sussex.
Pine Mount-Mill Creek	6,500	Cumberland.
Repaupo	13,000	Gloucester.
Silver Lake-Locust Island	5,590	Salem.
Stony Brook	30,604	Mercer and Hunterdon.
Town Bank	2,400	Salem.
Tributaries of Maurice River Cove	6,900	Cumberland.
New Mexico:		
Caballo Arroyos	7,680	Sierra and Dona Ana.
Dona Ana Arroyo	6,950	Dona Ana.
Fillmore Arroyos	16,292	Do.
Hackberry Draw watershed	13,760	Eddy.
Hatch Valley Arroyos	14,521	Dona Ana.
Pecos Arroyo	47,808	San Miguel.
Prop Canyon and tributaries	19,162	Valencia.
Salt-peter Creek	32,320	Colfax.
Upper Rio Penasco	128,000	Otero.
New York:		
Genegantslet Creek	66,457	Chenango, Cortland, and Broome.
Upper Five Mile Creek	38,100	Steuben and Yates.
North Carolina:		
Bear Creek	38,650	Wayne, Green, and Lenoir.
Broad Creek	37,675	Beaufort.
Burnt Mill Creek	10,496	Perquimans and Chowan.
Cutawhiskie Creek	29,750	Northampton and Hertford.
Deep Creek	18,246	Washington.
Folley Ditch	3,170	Gates.
Grindle Creek	51,871	Pitt.
Horse Swamp-Flat Swamp	9,330	Hertford.
Johnson's Milltail	13,200	Pitt.
Lowland	1,595	Pamlico.
Moccasin Creek	7,416	Johnston.
Mosley Creek-Tracey Swamp	36,380	Lenoir, Craven, and Jones.
Pollock Swamp	14,475	Chowan.
North Dakota:		
West tributary of Bois-de Sioux River, N. Dak. and S. Dak.	30,220	Richland, N. Dak., and Roberts, S. Dak.
Wild Rice "B"	145,385	Richland and Sargent.
Ohio:		
Black Brook	4,954	Portage.
East Fork of Buck Creek	6,570	Champaign.
Oklahoma:		
Cache Creek Bottom	12,535	LeFlore.
Long Branch	28,160	Payne and Noble.
Squaw Creek	7,940	Comanche.
Oregon:		
Lynx Hollow	11,720	Lane.
Skilpanon River	10,480	Clatsop.
Pennsylvania:		
Lackawaxen tributaries	26,625	Wayne.
Martin Creek	31,680	Susquehanna.
North Fork of Cowanesque River	7,650	Potter.
Saul-Mathay watershed	3,940	Mercer.

Projects approved administratively (226 projects)—Continued

State and project	Area in acres	County
South Carolina:		
Back Swamp.....	11, 754	Lee.
Beaverdam.....	18, 856	Edgefield.
Big Creek.....	13, 279	Anderson.
Broadmouth Creek.....	18, 600	Do.
Brushy Creek.....	23, 512	Anderson and Pickens.
Coneross Creek.....	43, 300	Oconee.
Hills Creek.....	14, 067	Chesterfield.
Lynches Lake Camp Branch.....	10, 626	Florence.
Waterce Creek.....	35, 000	Fairfield.
South Dakota:		
Green Creek.....	11, 104	Union.
Marne Creek.....	20, 825	Yankton.
Pattee Creek.....	25, 462	Lincoln.
Richland Creek.....	6, 515	Union.
Silver Creek.....	20, 661	Minnehaha.
Tennessee:		
Cub Creek.....	10, 719	Hardeman.
Johnson Creek.....	22, 610	Madison.
Meridian Creek.....	12, 300	Do.
Proctor Creek.....	8, 465	Clay.
Roark's Cove.....	12, 800	Franklin.
Shady Valley.....	12, 025	Johnson.
Thompson Creek.....	18, 700	Weakley and Henry.
Texas:		
Agua Dulce.....	228, 720	Nueces and Jim Wells.
East Bay Bayou.....	36, 000	Chambers and Jefferson.
Langford Creek.....	25, 030	Red River.
Logan Slough.....	7, 334	Lamar.
Macho Arroyo.....	11, 917	Hudspeth.
Madden Arroyo.....	21, 248	Do.
Mimms Draw.....	4, 525	Presidio.
Ramirez Creek.....	6, 605	Starr.
Town Branch.....	2, 176	Madison.
Turkey Creek.....	18, 880	Fort Bend.
Upper Las Moras Creek.....	18, 272	Kinney.
Utah:		
Green's Lake.....	6, 235	Iron.
Mill Canyon-Sage Flat.....	15, 296	Sevier.
Miller-Biglow.....	8, 000	Juab.
North Fork of Ogden River.....	42, 880	Weber.
Virginia:		
Back Creek.....	22, 340	Pulaski.
Beautiful Run.....	13, 800	Madison.
Horse Pasture Creek.....	17, 380	Henry.
Little River.....	30, 500	Louisa.
Marrowbone.....	19, 300	Henry.
Mountain Run.....	28, 700	Culpeper.
Muddy Creek.....	7, 450	Buckingham.
White Oak Run.....	11, 130	Madison.
Washington:		
Chimacum Creek.....	24, 965	Jefferson.
Saar Creek.....	11, 233	Whatcom.
Twin Buttes.....	4, 304	Klickitat.
West Virginia:		
Big Ditch Run.....	5, 730	Webster.
Bond's Creek.....	9, 435	Ritchie.
Dave's Fork-Christian's Fork.....	4, 154	Mercer.
Marlin Run.....	1, 035	Pocahontas.
Peck's Run.....	8, 210	Upshur and Barbour.
Upper Grave Creek.....	4, 920	Marshall.
Wisconsin:		
Alma-Mill Creek.....	10, 957	Buffalo.
Bay City.....	5, 826	Pierce.
Bogus Creek.....	7, 576	Pepin.
Garden Valley (Rose Valley).....	18, 494	Buffalo.
Lost Creek.....	5, 189	Pepin.
South Nelson.....	9, 406	Buffalo.
Trout Run.....	11, 273	Jackson.
Wyoming:		
Angell Draw.....	7, 204	Goshen.
Arnold Drain.....	4, 275	Do.
London Flats-Bovee.....	18, 588	Do.
Pine Ridge-Case Bier.....	25, 666	Do.

Mr. JOHNSON of Wisconsin. Do those include the public works projects?

Mr. HOLLIS WILLIAMS. If you desire that, we can give you the number approved by this committee and the Public Works Committee and those approved administratively.

Mr. POAGE. You gave us that about 6 months ago.

Mr. HOLLIS WILLIAMS. I happen to have it here for the Appropriations Committee, but I cannot just reach it right now.

Mr. D. A. WILLIAMS. We will supply it for the record.

Mr. STUBBLEFIELD. Would you include in that list where these projects are located that have been developed?

Mr. HOLLIS WILLIAMS. Yes.

Mr. STUBBLEFIELD. In eastern Kentucky what is the remedy for the situation there, where the local communities do not have the finances. It is not working in eastern Kentucky, in those places that I know of, because of the high cost per acre benefited. It is excluded there.

Mr. D. A. WILLIAMS. It is an extremely difficult problem, Mr. Stubblefield, not only in eastern Kentucky, but in the entire Appalachian area, actually, which has a comparable problem.

Mr. STUBBLEFIELD. It may be more intense in that area.

Mr. D. A. WILLIAMS. It may be more intense than in other areas because of certain factors. It may be more intense in eastern Kentucky. Because of the poverty, and the little, narrow valleys, and the cost of getting any amount of storage that would do much good in these narrow valleys it is such that you cannot come out with a favorable cost-benefit ratio, in very many of the cases in those watersheds in eastern Kentucky for flood prevention purposes.

Now, there is something that some of the folks are giving more attention to since the amendment last year which added recreation as a purpose. There are a few of those watershed projects now in eastern Kentucky where with the combination of recreation and flood prevention and some other things, you can have a feasible project, but it will not be all of them, by any means, and there will be a limit as to how much of this recreation will be desirable. These additional purposes and benefits are helping some already, and I think that we will see some further improvement.

As I did mention earlier, this amendment proposed here would permit the use of other funds, such as ARA funds to be used to help in the rights-of-way which would be very helpful to the people in eastern Kentucky, if that were to be done. I do not think there is any question about that.

Mr. STUBBLEFIELD. I do not think that we will have too much trouble with that rights-of-way problem down in my State. I think that the people will donate them.

Mr. D. A. WILLIAMS. Except where there is a road or a railroad or something like that in there.

Mr. STUBBLEFIELD. Last year I talked to the Governor and he was perfectly willing to contribute what he could toward some of these projects, but under this law you are not permitted to accept any of those, are you—I do not think that is a problem down there about the rights-of-way, however. I understand that cash contributions towards the construction is one thing. I understand that is not permissible.

Mr. D. A. WILLIAMS. That is correct. As the law now stands for flood prevention purposes, that is the construction of the dam itself, the law provides that the construction cost must be paid 100 percent by the Federal Government.

Mr. POAGE. At the very inception of this program we found that there was serious bidding on the part of various communities to get the first of these projects. The communities that had a good deal of money could always get the project if they would put up the money. Let me go off the record.

(Discussion off the record.)

Mr. POAGE. Back on the record.

And in other communities where the need was just as great, but where the people, apparently, were not as well off, they simply could not compete with that sort of thing. We simply felt that if we allowed this to get on a bid basis that many parts of the country would not get projects.

Mr. JOHNSON of Wisconsin. Was it not, to begin with, that they had to pay for the cost of the dam started under the original acquisition?

Mr. POAGE. I do not think that is correct, but we did find clearly that if it were on a bid basis that these various poor communities could never get them.

Mr. STUBBLEFIELD. And the per acre benefit-cost proposition stops many of them.

Mr. POAGE. I think that if we wanted to do that we might make a contribution, rather than let the locality itself make it.

Mr. STUBBLEFIELD. I am talking about the State doing it.

Mr. POAGE. I think that might be an answer, because if you let the State do it, obviously, then, you would not have this.

Mr. STUBBLEFIELD. Many local communities cannot put up the money.

Mr. POAGE. Do you not see what I am talking about?

Mr. STUBBLEFIELD. I see what you are talking about.

Mr. POAGE. If you leave it up to bid for these things, the richer communities will get all of the benefits, but if you did not let the localities put up the equalization fund, as you might call it, if you let the State do that, then, obviously, within the State jurisdiction your State has the allocation of the money. And in Kentucky, like Texas and Oklahoma, they have been actually getting more than their share for the last several years, because in the early stages of this the other States were not using it, but you are not going to get that, as I understand the situation—in fact, we are all going to be cut down, and your State has a certain amount of money coming to it and if Kentucky wants to supplement that, it might be the answer to let the State supplement it, and then the State would not have the proposition of the opulent area bidding against eastern Kentucky, at least, not before these people; they might do it before the State government, but they would not do it here in Washington.

Mr. HARVEY of Indiana. If you will yield, is there not a possibility, also, by reason of a regulation saying to a State like Kentucky, "Well, now, we will set this up on the basis of so much benefit from the standpoint of flood prevention. Do you want to charge the balance off against your recreational value," and let the State come in entirely, instead of the local community in picking up that part of the tab that normally would be paid for by the locality? I am trying

to help you, Frank. I am not trying to hurt you. And I am saying that the State may, and that we might help you without divesting ourselves of our formula.

Mr. COOLEY. Let this be off the record.

(Discussion off the record.)

Mr. POAGE. On the record.

Mr. COOLEY. If we pass this bill increasing this to 12,500 acre-feet would that be beneficial in the consideration of some of the watershed projects?

Mr. D. A. WILLIAMS. I am not sure that that would be a critical point, Mr. Cooley, with respect to that particular watershed, but we will check that and supply the information.

Mr. HOLLIS WILLIAMS. Just as a passing remark I think that this is one of the projects that has this point at stake. In other words, turning here to our record, if I may, and I shall go off the record.

(Discussion off the record.)

Mr. POAGE. On the record.

Mr. COOLEY. If we pass this bill it appears to me that would expedite this project.

Mr. HOLLIS WILLIAMS. Yes, sir.

Could I talk to something that Mr. Stubblefield said just a little bit ago like you and I have talked about?

In eastern Kentucky the projects have been held down mainly for two reasons. The administrator pointed out the narrow valleys, the steep slopes, and that it was hard to get a favorable cost-benefit ratio. That is one reason.

The second reason is that in some locations where you have public utilities, railroads, highways, houses, and other things the people just could not pay the land cost, easements, and rights-of-way costs. We had that latter situation in Connecticut also. The State legislature passed a bill appropriating \$6 million out of State funds to help in those high-land value areas to overcome that item.

On the other item, recently we did get a little relief on revising the criteria through Senate Document No. 97. Today we can claim secondary benefits. To illustrate what I mean by that, I will use a cotton gin illustration. Assuming that you had a community that had a cotton gin that formerly ginned 1,500 bales annually and you went up to 2,000 bales in production in that area. Heretofore we could not claim as a benefit to that community that spread of 500 bales. Under the secondary benefits we can claim that as a benefit accruing from the increased production in the community. That could apply to other items.

Secondly, where you are in a distressed area, in one of the ARA designated counties, if the project puts local people to work it is a benefit even though it is small. But you could not claim employment as a benefit if a contractor brought in his regular crew for a bulldozer, the operator, but if he employed a helper in that community you can claim that as a benefit. It is small—it is really small.

I give only those two illustrations. There are a few other items that have helped us a little bit in our Kentucky projects.

There have been other things proposed. The administrator pointed out here that if this committee should ever decide to consider single structures for recreation storage—and I am not trying to put in a plug today—I think that all of you know where I stand on that—we have an understanding on that—but we have even gone so far

that even though Congressman Poage said that he was not for this special legislation. But when we were studying the Appalachian proposed bill, if it is decided to give any special consideration to any special area, we have pointed out that we may have to consider less than an economically feasible project. According to present criteria, for every dollar that goes in you have to have a dollar returned. And we have been that practical about it. It might have to be dropped down to some lesser amount to permit projects to be developed in areas of this type. No miracle, however, can be performed under the present law. If we get some more relief on lands, easements, and rights-of-way we can move up a few. We are getting in a few more under this secondary benefit claim than we did in the past, just a few more.

Mr. POAGE. What do you suggest? There are certain benefits that are attributable to recreation, even though they were not recreational benefits of the type that can be attributed accordingly. And for the States to pay for that type of recreation, we could let the States pay for that type and in that way the project might be all right, but you could not justify the \$50,000, for example, for some project, if the State wanted to pay \$25,000 to get the recreation, and if they decided to do that, they could pay that.

Mr. D. A. WILLIAMS. There is actually some of that taking place already. I do not recall the names of the watersheds, but there are at least two watersheds in Pennsylvania where State money is going in to help with that kind of a thing.

Mr. POAGE. Are there any further comments or questions on this subject?

If not, we are very much obliged to you gentlemen.

Without objection, the prepared statement of Mr. Eugene W. Weber, Deputy Director of Civil Works, Office of the Chief of Engineers, Department of the Army will be made a part of the record at this point.

(The statement referred to follows:)

STATEMENT OF EUGENE W. WEBER, DEPUTY DIRECTOR OF CIVIL WORKS, OFFICE OF THE CHIEF OF ENGINEERS, U.S. ARMY

Mr. Chairman and members of the subcommittee: I am Eugene W. Weber, Deputy Director of Civil Works, Office of the Chief of Engineers. At the request of the staff of this committee, I am appearing here today to present the views of the Department of the Army on H.R. 9695 and H.R. 9938 which would raise from 5,000 acre-feet to 12,500 acre-feet, the limit on the capacity that may be included for flood control purposes in any reservoir constructed pursuant to the authorities of Public Law 566.

Since the Department of the Army was not asked to submit a report, we have not prepared an official position on these specific bills. However, the amendment contemplated by the bills was one of several proposals which the Department of Agriculture submitted to the Bureau of the Budget in 1962, and which were reviewed by the Department of the Army at that time. The position then taken by the Department of the Army was set out in a letter of February 7, 1963, to the Director of the Bureau of the Budget signed by Mr. Powell Pierpoint, Special Assistant to the Secretary of the Army for Civil Functions. We have obtained informal clearance from the Office of the Secretary of the Army and from the Bureau of the Budget to quote those parts of that letter which bear upon the amendment proposed by H.R. 9695 and H.R. 9938.

The Department of the Army's views on the proposal to raise the limit on flood control capacity from 5,000 to 12,500 acre-feet are embodied in the following quotations from Mr. Pierpoint's letter:

"The Department of the Army would prefer that the present limit of 5,000 acre-feet for flood detention capacity be retained and that all projects requiring more than that amount for an optimum solution be authorized for construction

by the Corps of Engineers. The proposed increase would greatly enlarge the area of overlap (and its serious attendant problems) between the Public Law 566 program and the programs of the Corps of Engineers and Bureau of Reclamation. However, the Department will interpose no objection to the increase to 12,500 acre-feet provided certain essential principles outlined below are also recognized in the amendment to Public Law 566. These principles are:

"(a) Public Law 566 plans in which flood protection is an objective should be formulated with a view to providing such benefits primarily within an area not exceeding 250,000 acres.

"(b) Any Public Law 566 plan or group of plans that would result in downstream effects of sufficient magnitude to require that they be taken into account in the formulation or operation of downstream projects should be coordinated with the agency concerned with the downstream development.

"The Department of the Army has repeatedly given its support to the basic principle that all reservoirs in a river basin, whether large or small, should constitute elements of that basinwide reservoir system which best meets the long-range needs of the basin; the 'best' system being that which maximizes the sum total of net benefits, including the benefit to be derived from power generation, water supply for all purposes, water quality improvement, reclamation, navigation, enhancement of recreation and fish and wildlife, as well as flood damage reductions.

"The main purpose of paragraphs (a) and (b) above is to implement this basic principle. Paragraph (b) would accomplish this by requiring that the agencies responsible for upstream and downstream planning coordinate their plans in any river basin in which the Public Law 566 projects expected to be undertaken, in the long run, would produce downstream effects of such magnitude as to require that they be taken into account in the formulation, modification, or operation of downstream projects.

"Paragraph (a) would require that Public Law 566 projects be planned to meet needs within the watersheds they cover. It would thus require the Department of Agriculture to confine itself to the minor engineering works needed for the solution of the problems which occur in small headwater drainage areas. This would not prevent the Department of Agriculture from claiming incident benefits in downstream valleys. It would prevent it from unilaterally proposing projects primarily for the purpose of producing downstream benefits. This is in accord with the clear intent of the Congress that in the engineering field the Department of Agriculture would confine itself to dealing with the problems of small headwater watersheds.

"These provisos are necessary for the reason that in some river basins even those Public Law 566 projects designed primarily to meet needs within small headwater watersheds will, after a sufficient proportion of the basin is encompassed by such projects, produce incidental downstream effects large enough to require changes in the design, or the operation, of downstream projects."

This ends the quotation from Mr. Pierpoint's letter.

To complete the record, I should add that after considering the foregoing views of the Department of the Army, the Bureau of the Budget informed the Department of Agriculture that enactment of legislation to raise the limit on flood control capacity from 5,000 to 12,500 acre-feet would be consistent with the administration's objectives, but that to insure proper consideration of the small watershed program with the programs of other Federal agencies it would be necessary to revise the regulations issued by the President pursuant to the last proviso of section 5 of Public Law 566.

So far as I know, there have been no changes in the positions of the Department of the Army and of the Bureau of the Budget since the actions to which I have alluded took place; that is, since February and March of 1963.

Accordingly we would interpose no objection to the enactment of H.R. 9938 or those provisions of H.R. 9695 which provide for raising the flood storage capacity of Public Law 566 reservoirs from 5,000 to 12,500 acre-feet. We have no had opportunity to consider or formulate a position on other provisions of H.R. 9695.

The Department of the Army and the Corps of Engineers appreciate the opportunity you have given us to place our views before the subcommittee.

Mr. POAGE. The subcommittee will stand in recess subject to the call of the Chair.

Thank you.

(Whereupon, at 11:30 a.m., the subcommittee was in recess, to reconvene subject to the call of the Chair.)

