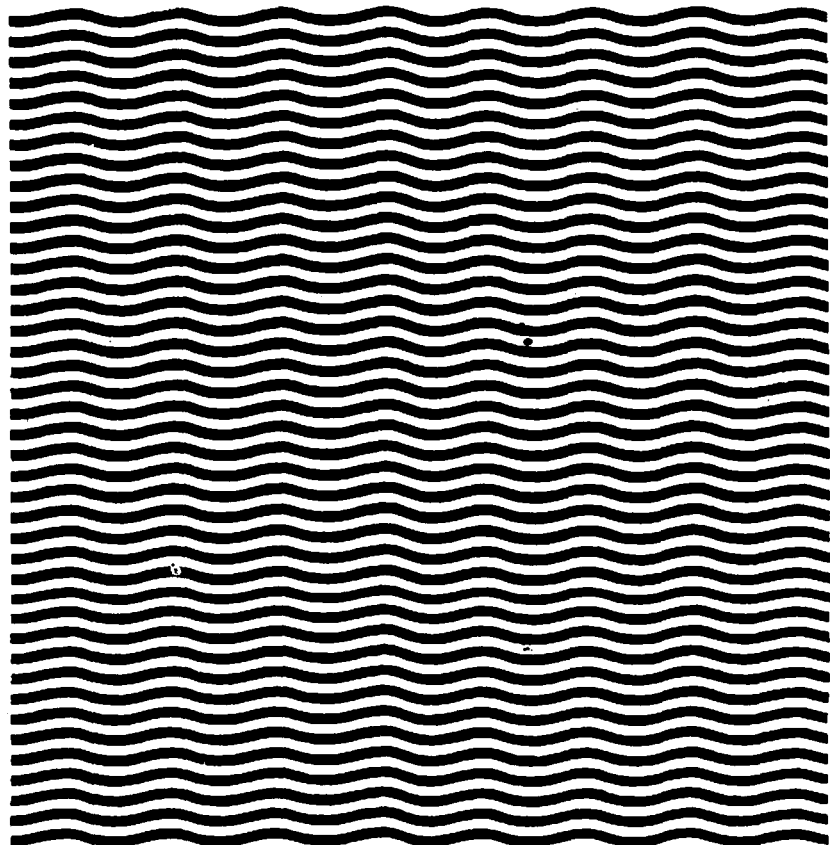
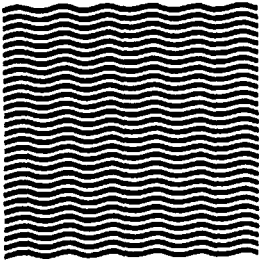




United States
Department of
Agriculture

Soil
Conservation
Service

A History of Water Resource Activities of the United States Department of Agriculture



A HISTORY OF
UNITED STATES DEPARTMENT OF AGRICULTURE
WATER RESOURCE ACTIVITIES

by
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Preface

This brief history was written to explain how and why the United States Department of Agriculture (USDA) became a participant in national water resources development programs.

USDA was engaged in water resources management studies before the close of the 19th century. With the establishment of the Soil Conservation Service in 1935 and enactment of the Flood Control Act of 1936, USDA water resources programs were enlarged significantly. The Flood Control Act of 1944 and the Watershed Protection and Flood Prevention Act of 1954 added new responsibilities and programs for water resources planning and construction of works of improvement. In recent years, USDA has been assigned numerous new water resources planning and management authorities, including an important role for implementing President Carter's water policy initiatives.

This historical record provides information for analyzing water resources programs and for shaping appropriate USDA roles in future water management efforts. Fulfilling its broad responsibilities for protection and improving natural resources and for maintaining environmental quality requires USDA's creative, positive, and direct involvement in Federal water resources policies and actions.



Joseph W. Haas
Assistant Administrator
for Water Resources

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The views expressed in this report are not necessarily the official policy of USDA.

C O N T E N T S

	PAGE
CHAPTER 1 - INTRODUCTION	1
CHAPTER 2 - PRE-WORLD WAR II ACTIVITIES	7
Soil Conservation Service	7
National Resource Planning Organizations	9
Flood Control Act of 1936	11
Flood Prevention Surveys	12
Missouri River Basin Plan	14
Water Facilities Act of 1937	15
Land Utilization and Retirement of Sub-Marginal Land Program	16
Case-Wheeler Program	16
CHAPTER 3 - POST WORLD WAR II ACTIVITIES	19
Flood Control Act of 1944	19
Pilot Watershed Projects	22
Other Activities	25
CHAPTER 4 - WATERSHED PROTECTION AND FLOOD PREVENTION PROGRAM	27
Legislation	27
Characteristics of the Program	29
Watershed Planning	31
Constraints	33
Problems	34
Moratorium	34
National Environmental Policy Act of 1969	36
The Uniform Relocation Assistance and Real Property	
Policies Act of 1970	40
Protection of Archeological and Historical Properties	40
Principles and Standards	42
Agreements Between the SCS and Corps of Engineers	42
Watershed Operations	43
Problems	47
Dams	47
Channels	48
Summary	50
CHAPTER 5 - USDA RIVER BASIN STUDIES	51
Organization	51
Washington Advisory Committee	52
Field Advisory Committees	53
Cooperative Comprehensive River Basin Studies	53
Examples	55
Corps of Engineers Sponsored	55
Joint Studies with Corps	56

Chapter 5 (continued)	Page
U.S. Study Commissions	56
Appalachia	59
Westwide Study	61
State and Local Cooperative Studies	67
CHAPTER 6 - FEDERAL INTERAGENCY RIVER BASIN STUDIES	69
Arkansas-White-Red River Basin Plan	69
Ad hoc Water Resource Council	71
Type I Surveys	72
Type II and Level B Surveys	75
CHAPTER 7 - OTHER ACTIVITIES RELATED TO THE WATERSHED PROTECTION AND FLOOD PREVENTION PROGRAMS	79
Flood Hazard Analyses	79
Flood Insurance Studies	81
Recreation and Fish and Wildlife	83
Recreation	83
Fish and Wildlife	85
Emergency Watershed Protection	88
CHAPTER 8 - OTHER WATER RESOURCE ACTIVITIES OF USDA	91
Agricultural Research Service	91
Agricultural Stabilization and Conservation Service	93
Economic Research Service	94
Farmers Home Administration	95
Forest Service	96
Rural Electrification Service	99
Soil Conservation Service	100
CHAPTER 9 - INTERAGENCY COORDINATION	105
The Federal Interagency River Basin Committee (FIARBC)	105
Official Study Commissions	106
First Hoover Commission	106
The President's Water Resources Policy Commission, 1950	106
Subcommittee to Study Civil Works of House Committee on Public Works	107
Second Hoover Commission	107
Presidential Advisory Committee on Water Resources Policy	108
Senate Select Committee on Water Resources	109
Interagency Committee on Water Resources (ICWR)	109
Coordination of Project Evaluation	110
Bureau of the Budget Circular A-47	110
Proposed Practices for Economic Analysis of River Basin Projects	110
Senate Document 97	111

Chapter	Page
CHAPTER 10 - THE WATER RESOURCES PLANNING ACT OF 1965	113
The Water Resources Council	113
River Basin Commissions	115
The National Assessment	116
Development of Water Resource Plans	118
Grants to the States	119
Principles and Standards	119
National Water Commission Report	122
National Conference on Water	122
Section 80(c) Study	123
Water Policy Review	124
CHAPTER 11 - WATER CONSERVATION AND WATER QUALITY PROGRAMS	127
Colorado River Basin Salinity Control Act	127
Memorandum of Agreement for Title I	128
Memorandum of Agreement for Title II	129
Interagency Study on Irrigation Efficiencies	131
Rural Clean Water Program	132
CHAPTER 12 - SUMMARY	135
REFERENCES	141
BIBLIOGRAPHY	154

CHAPTER 1

INTRODUCTION

On May 15, 1862, President Lincoln signed into law an Act of Congress establishing "at the seat of the Government of the United States a Department of Agriculture, the general design and duties of which shall be to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate, and distribute among the people new and valuable seeds and plants." (1) This Act was the culmination of efforts and recommendations made over a period of many years.

George Washington's Mount Vernon estate was probably the nation's first experimental farm. In his last annual Message to Congress in 1796, he proposed that a Board of Agriculture be established to collect results of experiments and observation and to pass this information on to appropriate officials in the States. (2) In 1820, the House of Representatives established an agricultural committee and the Senate established one in 1825. In 1852 the United States Agricultural Society was formed. It was primarily a pressure group to direct official interest to the agricultural needs of the time. Many of its members were prominent and the Society insisted that a national Department of Agriculture be established. (3) In 1860, the Maryland Agricultural Society endorsed the establishment of a Bureau of Agriculture in the Department of the Interior. (4) The Massachusetts Board of Agriculture also worked to this end. (5)

Isaac Newton took the oath of office as first Commissioner of Agriculture on July 1, 1862. He inherited a staff of nine employees and the facilities of the Agricultural Division of the Patent Office. Advocates of the Department considered agriculture the single most important economic activity in the nation and urged that it be made an Executive Department, headed by a Secretary who would be a member of the President's Cabinet. It was not until 1889, however, that the Department was elevated to Cabinet status. (6)

In 1879, James Wilson of Iowa was appointed Secretary of Agriculture. He served sixteen years and set guidelines that made the Department an outstanding research organization. It established experimental farms and laboratories in various parts of the country to work on specific agricultural problems. However, most experimental work was carried out in state agricultural experiment stations. These had been established on a nationwide basis by the Hatch Act, passed in 1887. In 1889 the Department began issuing farmers' bulletins as a means of diffusing among the people of the United States information about scientific developments in the field of agriculture. (7)

To adapt research results to local conditions, the first county agent was appointed in 1906 to do something about boll weevils in Texas.

Later, other agents were appointed in the South and elsewhere. In 1914 this system was extended throughout the nation with the passage of the Smith-Lever Act. (8)

In 1889, the Weather Bureau was transferred from the War Department to the Department of Agriculture. An Appropriation Act of March, 1889, (30 Stat. L., 947, 952) made a specific appropriation of \$10,000 "to enable the Secretary of Agriculture to map the tobacco soils of the United States." This was the beginning of the Soil Survey. The Weather Bureau initiated USDA's work on soils in 1892 by publishing a report on the "Relation of Soil to Climate" and a bulletin on "Some Physical Properties of Soils in Their Relation to Moisture and Crop Distribution". This bulletin was authored by Milton Whitney in cooperation with the Maryland Experiment Station and USDA. (9) This probably was the first effort to establish scientifically a relationship between soil and water in the area of crop production which would later become such a major part of the Department's program.

On January 2, 1894, the Division of Agricultural Soils was organized in the Weather Bureau by order of the Secretary of Agriculture. Charles Dabney, Jr., Assistant Secretary of Agriculture, insisted upon the publication of Farmers Bulletin No. 20, "Washed Soils; How to Prevent and Reclaim Them", now considered a milestone in soil conservation. (10)

Agricultural engineering activities have been a subject of research in USDA since 1890. The first engineering studies dealt with irrigation of agricultural crops. Irrigation investigations were authorized by Congress in 1898. This resulted in the establishment of a Division of Irrigation in the Office of Experiment Stations. Its initial objective was to determine the best locations for artesian wells. Research on drainage became an added responsibility of this office in 1902. (11) In 1905, investigations in irrigation began under the Office of Western Agricultural Extension at the request of the Bureau of Reclamation.

In 1915, the work on irrigation and drainage was transferred to USDA's former Office of Public Roads, which was renamed Office of Public Roads and Rural Engineering. In 1921, all work in rural engineering was incorporated in the Division of Agricultural Engineering in the recently created Bureau of Public Roads. On July 1, 1931, the Division of Agricultural Engineering was raised to Bureau status. It continued its concern with irrigation and drainage. (12) On December 3, 1938, the Secretary of Agriculture, by Memorandum 799, transferred certain functions of the Bureau of Agricultural Engineering to the Soil Conservation Service. He designated H. H. Bennett, Chief of SCS, to have charge of that part of the work of the Divisions of Irrigation and Drainage which related to investigations, experiments and demonstrations on the construction and hydrologic phases of farm irrigation and land drainage, including snow-survey responsibilities. This transfer of authority was effective January 2, 1939. (13)

The Division of Dryland Agriculture was organized in the Bureau of Plant Industry in 1905, to investigate methods of crop production

under limited moisture supplies and semi-arid conditions. This same year the states in the Great Plains began to establish permanent substations to study dryland problems. Twenty-two substations were established between 1905 and 1916. One more was established in 1937. These were distributed among ten states as follows: Colorado - 1, Kansas - 3, Montana - 3, North Dakota - 4, Nebraska - 2, New Mexico - 1, Oklahoma - 2, South Dakota - 2, Texas - 3, and Wyoming - 2. (14)

On March 1, 1911, The Weeks Act (36 Stat. 961) was passed. It authorized the Secretary of Agriculture to "Examine, locate and recommend for purchase . . . such lands within the watersheds of navigable streams as . . . may be necessary to the regulation of flow of navigable streams...." The Act further states that lands so acquired will be reserved and administered as national forests. Prior to this time, on February 1, 1905, control over the forest reserves had been transferred from the Land Office of the Department of the Interior to the Department of Agriculture. Responsibility for these lands was given to Chief Forester Gifford Pinchot. With these lands he inherited the power to issue permits for water power development on National Forest Lands. (15)(15a)

In 1920 the Federal Power Commission was formed as a Cabinet-level committee of the Departments of War, the Interior, and Agriculture. The 1920 Federal Water Power Act authorized the committee to license non-Federal development of water power on navigable waters and public lands. (16) Forest Service engineers conducted water resource feasibility studies which became the basis for many of the major projects built in the 1920-1945 period. (Field engineering for the Commission continued to be accomplished for projects on National Forest lands by engineers on Regional Foresters' staffs until about 1950.) Forest Service personnel made significant contributions to the draft of the bill that became the Federal Power Act. In 1930 an independent Commission was established consisting of five commissioners who are presidential appointees. (17) The Forest Service continues to have liaison responsibilities between the Department of Agriculture and the Federal Power Commission. Furthermore, pursuant to the Secretary's Statement of Organization and Delegations, November 27, 1964, (29 Federal Register 16210) the Forest Service is authorized to act for the Secretary in all matters relating to the Department's responsibilities and authorities under the Federal Power Act. (18)

On June 7, 1924, the Clarke-McNarey Act (43 Stat. 653) was passed. As amended and supplemented (16 U.S.C. 505, 564-570) it "authorizes and directs the Secretary of Agriculture, in cooperation with . . . various states . . . and other suitable agencies to recommend systems of forest fire prevention and suppression . . . with a view to the protection of forest and water resources". In cooperation with the states, due consideration was to be given to the protection of watersheds of navigable streams. However, such cooperation could be extended, at the discretion of the Secretary of Agriculture, to any timbered or forest producing lands or watersheds from which water is secured for domestic use or irrigation within the cooperative states. (19)

On May 22, 1928, the McSweeney-McNary Forest Research Act (45

Stat. 699) was passed. As amended and supplemented (16 U.S.C. 581) it "authorizes and directs the Secretary of Agriculture to conduct such investigations, experiments, and tests as he may deem necessary....in order to determine, demonstrate and promulgate the best method....of maintaining favorable conditions of water flow and the prevention of erosion". (20)

In 1925 Congress directed the Corps of Engineers and the Federal Power Commission to prepare jointly a list of navigable streams and their tributaries on which power development appeared practicable (with the exception of the Colorado River). This list was to be prepared with a view to formulating "general plans for the most effective improvement of such streams for the purposes of navigation and the prosecution of such navigation improvement in combination with development for power, flood control, and irrigation". The list of streams which resulted from this effort was submitted to Congress in 1927 and printed in House Document 308. The 1927 Rivers and Harbors Act authorized the Corps to prosecute these surveys alone. Reports prepared on these streams became known as the "308 reports". These reports were to have a significant influence in studies to be made later by the Department of Agriculture.

USDA's early research work was not limited to irrigation, drainage and soil-moisture relationships. It has been engaged in research on the hydrology of agricultural watersheds since 1917. In that year a suitable area of 112 acres situated about $4\frac{1}{2}$ miles southeast of Jackson, Madison County, Tennessee, was chosen as the site for experimentation. Nearly all the area was in a farm owned by M. N. Murchison. The experiments conducted consisted in making rainfall and run-off measurements on six watersheds ranging in area from $1\frac{1}{4}$ to 112 acres. (22)

This research provided the basic concepts and data for use of the rational method of computing the maximum rate of run-off from a watershed. The basic assumption was that the maximum rate of run-off would result from a rainfall of maximum uniform intensity continuing for a time equal to or exceeding the time of concentration of a given watershed. The relationship was expressed by the following equation:

$$Q = C I A$$

Where Q = Run-off coefficient or coefficient of imperviousness, representing the rate of run-off to the rate of rainfall.

I = Rainfall intensity in cubic feet per second per acre, or approximately in inches per hour.

A = The watershed area in acres.

This method of run-off computation supplanted the use of empirical formulae that previously had been used for computing storm run-off but did not make provision for the various factors affecting run-off. (23) It is estimated that, eventually, 150 instrumented watersheds, ranging in size from 1 to 500 acres, were utilized to collect run-off data from small agricultural areas.

On November 21, 1928, during a hearing before the Agricultural Appropriations Committee of the House of Representatives, Congressman James P. Buchanan of Texas remarked that one experiment station at Spur, Texas, had been doing valuable work on soil erosion.* He pleaded that the nation needed a general policy of soil and water conservation. After receiving data on funds needed to make a start on the problem, Congress responded by appropriating funds for soil erosion investigations and the establishment of regional soil erosion experiment stations. This action was known as the Buchanan Amendment to the Agricultural Appropriations Bill for FY 1930 (P.L. 70-769), dated February 16, 1929. Operation of these stations was assigned to the Bureau of Chemistry and Soils, in cooperation with the Forest Service and the Bureau of Agricultural Engineering, in 1931 (45 Stat. 1207). (24)

The locations selected for the Regional Soil Erosion Experiment Stations were as follows:

Batesville, Arkansas; Tifton and Watkinsville, Georgia; Dixon Springs, Joliet, and Urbana, Illinois; Lafayette, Indiana; Clarinda, Cortana, Beaconsfield, Independence, and Seymour, Iowa; Hays, Kansas; Baton Rouge, Louisiana; Presque Isle, Maine; Benton Harbor and East Lansing, Michigan; Holly Springs and State College, Mississippi; Bethany and McCredie, Missouri; Hastings, Nebraska; Bumerville, Marlboro, and New Brunswick, New Jersey; Ithaca, Geneva, and Marcellus, New York; Statesville and Raleigh, North Carolina; Coshocton and Zanesville, Ohio; Cherokee and Guthrie, Oklahoma; Clemson and Spartanburg, South Carolina; Knoxville and Greenville, Tennessee; Temple and Tyler, Texas; Blacksburg, Virginia; Pullman, Washington; LaCrosse, Madison, and Owen, Wisconsin; and Mayaguez, Puerto Rico. (25)

During the period 1862 to 1929 the Department of Agriculture had experienced a major expansion in its program activities and areas of responsibility. It had grown from one which primarily collected and dispersed seed to one which, in addition to its other duties in the field of agriculture, carried out research in irrigation, land drainage, establishing surface water run-off relationships on small agricultural areas, and determining soil moisture relationships for the production of various crops. Also, it had been given responsibility for the protection of National Forest lands for the production of run-off for navigable streams, and, together with the Departments of Army and the Interior, for licensing the use of water for the production of power.

Its areas of activities had established the fact that land and

* The author has had first-hand information and observation of the results of the diversion of excess run-off from areas off this station onto the station. The waters were spread over cropland areas by means of a syruopan system and thereby provided supplemental irrigation. The principle has been utilized in the High Plains and Rolling Red Plains areas of Texas and in other areas to utilize available off-site run-off for crop production and for increased forage production on range lands.

water cannot be separated since all surface run-off is derived from the land and all fresh water recharge must pass through the soil mantle. Also, the production of all plant life is dependent on soil-moisture relationships which can be manipulated by soil and cover conditions.

The Department, therefore, had achieved a stature and scope which permitted it to fulfill the responsibilities in the field of water resource development which were to be assigned it in the decades ahead.

NOTE:

For those wishing to explore in greater depth the early history of the Department, the following books are recommended:

The Department of Agriculture, Wayne D. Rasmussen and Gladys L. Baker, Praeger Publishers, 111 Fourth Ave., New York, N. Y. 10003

After A Hundred Years, The Yearbook of Agriculture 1962, United States Government Printing Office, Washington, D. C.

A Century of Service - The first 100 Years of USDA

CHAPTER 2

PRE-WORLD WAR II ACTIVITIES

Soil Conservation Service

On August 25, 1933, the Soil Erosion Service was established as a temporary organization in the U. S. Department of the Interior. This action was taken without formal order, but was based on a resolution adopted on July 17, 1933, by a special board of public works. The new agency was to carry out the provisions of the National Industrial Recovery Act of June 16, 1933 (48 Stat. 195) relating to soil erosion prevention and to administer the expenditure of Public Works Administration Allocations for this purpose. On September 19, 1933, the Soil Erosion Service became operational with the transfer of Hugh H. Bennett from the Department of Agriculture to the Department of the Interior as its Director. (26)

All funds, personnel, property and equipment of the Soil Erosion Service were transferred to the Department of Agriculture by an Administrative Order signed by the Federal Emergency Administrator of Public Works on March 23, 1935. The order was approved by the President on March 25, 1935. Authority for this action was cited as Executive Order 6252, August 19, 1933, and Executive Order 6929, December 26, 1934. As a result of this transfer to the Department of Agriculture, the Emergency Conservation Work (ECW) camps assigned to the Forest Service for erosion control work on agricultural lands were transferred to the SES. (These camps were manned by CCC personnel.) Additional new camps also were assigned to the Service. (27)

On March 27, 1935, the Secretary of Agriculture, by Departmental Memorandum 665, directed the unification of the Department's activities pertaining to soil erosion under the Soil Erosion Service. This order transferred to the SES the erosion control experiment stations of the Bureau of Chemistry and Soils and the Bureau of Agricultural Engineering and the erosion control nurseries of the Bureau of Plant Industry. (28)

The 10 experiment stations transferred were located near Guthrie, Oklahoma; Temple, Texas; Hays, Kansas; Tyler, Texas; Bethany, Missouri; Statesville, North Carolina; Pullman, Washington; Clarinda, Iowa; La Crosse, Wisconsin; and Zanesville, Ohio. (29)

On April 27, 1935, the President approved the Soil Conservation Act of 1935 (P.L. 46-74th Cong.). It directed the Secretary of Agriculture to establish an agency to be known as the "Soil Conservation Service" to exercise the powers conferred on him by the Act. On that same day the Secretary issued Departmental Memorandum 673 establishing the Soil Conservation Service in the Department of Agriculture. It further provided that the SCS include the activities conducted under the Soil Erosion Service. (30)

By December 31, 1935, the SCS, along with its other program activities, such as demonstration projects, was operating 489 Emergency

Conservation Work Camps (Civilian Conservation Corps). These camps provided the technical assistance, manual labor, and necessary materials to install water related and other erosion control measures on privately owned lands. The measures included terraces, waterways, check dams, gully control structures, stock ponds, wind breaks, tree plantings, grass plantings, wildlife plantings, and assistance with irrigation and drainage. WPA labor crews also were utilized for this purpose in some localities. The ECW Camps continued to be utilized in this manner until the outbreak of WWII called for their disbandment.

Public Law 74-46, 49 Stat. 163, was stated in very general language and permitted a wide range of activities. In its preamble it states:

"...that it is hereby declared to be the policy of Congress to provide permanently for the control and prevention of soil erosion and thereby to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands and relieve unemployment, and the Secretary of Agriculture, from now on, shall coordinate and direct all activities with relation to soil erosion...."

This broad authority has permitted the Secretary to participate in essentially all programs related to soil and water resources, being limited only by personnel and appropriation of funds.

The SCS was staffed to include all the disciplines considered necessary to provide technical assistance to meet all the needs of a farmer or rancher in planning and applying a complete conservation program on his lands. The disciplines included: soil conservationist (an individual whose formal training and/or experience qualified him to coordinate the several disciplines required to plan and apply a complete conservation plan), soil scientist, agronomist, engineer, biologist, geologist, forester, range specialist, and plant material specialist. These disciplines were dispersed at various levels of Service organization depending upon the degree of demand for their services. The organization was such that service for each discipline could be provided at any level of Service organization.

On June 6, 1935, the Secretary of Agriculture's Committee on Soil Conservation made a recommendation, approved by the Secretary, to the effect: "That on or after July 1, 1937....all erosion-control work on private lands, including new demonstration projects, be undertaken by the Soil Conservation Service only through legally constituted Soil Conservation Associations". Out of this action, Soil Conservation Districts were born. In February 1937, the President submitted to the Governors of all States a standard State Soil Conservation Districts Law. He suggested that authority be given farmers and ranchers to organize districts specifically for conservation of soil and water resources. (31) On March 3, 1937, the first Soil Conservation Districts Law was enacted in Arkansas. (32)

Rapid action followed in other states. As early as April 24, 1941, one state, Alabama, had all its farmland included in soil conservation districts. (33) By the late 1960's there were about 3000 districts in the 50 states, Puerto Rico, and the Virgin Islands. All of these were cooperating with the SCS. (34)

Through these districts and the responsibility of SCS for the technical aspects of the ACP administered by the Agricultural Stabilization and Conservation Service, the SCS had technical relationships within almost every county of the nation. This provided the SCS with a technical delivery system to essentially every county of the U. S. This is a unique capability within the Federal Government.

National Resource Planning Organizations

There were four successive national planning organizations which operated between 1933 and 1943. They were really the same agency reorganized three times. When Congress abolished the last of the four, the National Water Resources Planning Board, in 1943, it instructed that the agency's functions not be transferred to any other agency. (35)

The National Planning Board was the first of the four. It was created in 1933 as a consequence of the National Industrial Recovery Act of 1933. The Board's chief water resources planning accomplishment was coordinating the work of the President's Committee on Water Flow. This committee's report contained multiple-purpose plans for 10 river basins. These plans were based primarily on Corps of Engineers 308 reports and Bureau of Reclamation surveys. (36)

The National Planning Board was reorganized as the National Resources Board in June 1934. It was an independent agency reporting directly to the President. In its December 1934 report it recommended that studies of water projects for adoption by Congress be prepared on the basis of drainage basins as entire units and that they consider a great variety of water and land uses and controls. It also recommended detailed engineering, economic, and legal studies of 17 drainage basins. (37)

The National Resources Board passed out of existence when title II of the NIRA expired. The National Resources Committee was established by Executive Order, under the Federal Emergency Relief Appropriations Act of 1935, to continue its work. The most important achievement of the National Resources Committee's work was a nationwide study of drainage basin problems and programs. This study was made by NRC's Water Resources Committee. (38)

The Water Resources Committee was appointed July 24, 1935. Among its members were H. H. Bennett, Chief, SCS, and J. N. Darling, Bureau of Biological Survey, USDA. Other membership came from the University of Chicago, U. S. Geological Survey, Army, New York University, Bureau of Reclamation, U. S. Public Health Service, Federal Power Commission, State

of Maryland's Department of Health, and a USDA alternate from Bureau of Agricultural Engineering. (39)

This committee was to serve as a coordinating and steering group for continuation and re-orientation of water studies under the Natural Resources Committee. Its objectives were (1) to achieve closer contact and cooperation with other Federal agencies, and (2) to achieve a necessary reduction in overhead costs of the Section. To do this it would work through other agencies and not build up a continuing committee staff. Among the subjects with which it was concerned were: Policy in regard to small water developments, and Policy on flood control projects. (40)

On October 8, 1935, the committee submitted a Report on Federal Activities Relating to Small Water Storage Projects. The following quote summarizes its findings:

"Small water storage construction programs have found wide popularity as Federal work relief during the past two years. Federal agencies had long been interested in this type of project from the standpoint of design and use for stock water supply, irrigation, flood protection, recreation, wildlife conservation, power, and erosion control, but it was not until the emergency relief program of 1933 was authorized that large scale construction became practicable. Under the Civilian Conservation Corps thousands of projects supervised by the Forest Service, Division of Grazing, Indian Office, National Park Service, and Soil Conservation Service were built on public domain and on private lands as well, and under the Federal Emergency Relief Administration many states initiated extensive small dam programs." (41)

The Report also gave a statement regarding the extent of this program. It amounted to 1,100 recreational dams, 3,600 farm ponds, 2,000 water holes, 1,150,000 erosion control dams, and 2,600 other small reservoirs. These were constructed by CCC camps during the period April 1933 to March 1935. (42)

Probably the most important achievement of the Water Resources Committee was a nationwide study of drainage basin problems and programs. It contained recommendations for both Federal and State development. It also sponsored more detailed studies on particular river basins. (43)

In 1939 the National Resources Committee was reconstituted as the National Resources Planning Board and elevated to the role of planning division of the Executive Office of the President. Among other duties, it was authorized to undertake research and analyze problems involving water and to report plans and programs to the President and Congress. (44)

In a Memorandum to the Secretary of Agriculture in November 1936, the Flood Control Committee of the Water Resources Committee stated that the comprehensive nature of the basin surveys and reports would indicate that nearly all the Bureaus of the Department would be involved. It further stated that the two most concerned would be the Forest Service

and the Soil Conservation Service. (45)

The Secretary of Agriculture established a Director of Flood Control in his office with a small staff. Its duties were defined as: establish policies and broad plans of work; allocate funds; coordinate work of the various bureaus in the field of flood control; collaborate with bureaus in preparation of reports to Congress; and to coordinate work of USDA with other Departments. (46)

The Secretary defined the duties of the three most concerned agencies as follows:

(1) The Soil Conservation Service would have responsibility for farm land, for streams the treatment of which is an integral part of farm land management, and on intermingled farm and forest land in cooperation with the Forest Service.

(2) The Forest Service would have responsibility for forest lands, for streams the treatment of which is an integral part of forest land management, and on intermingled farm and forest land in cooperation with SCS.

(3) The Bureau of Agricultural Economics would assist in the economic aspects of the surveys, either directly or through SCS-BAE liason groups, to consider social and economic aspects of various land utilization plans, and to serve as economics advisor to the Director of Flood Control. (47)

Flood Control Act of 1936

The Flood Control Act of 1936, P.L. 74-738(49 Stat. 1570) was approved June 22, 1936. The Congress, for the first time in legislative action, recognized the importance of providing watershed protection and flood prevention as a complement to the downstream flood control program of the Corps of Engineers. It, in effect, recognized that floods originate in the tributary areas of rivers and other waterways.

In Sec. 2 of the Act the Congress directed that:
"....Federal investigations of watersheds and measures for run-off and waterflow retardation and soil erosion prevention on watersheds shall be prosecuted by the Department of Agriculture under the direction of the Secretary of Agriculture, except as otherwise provided by Act of Congress;...."

This Act contained another innovation. It specified in Sec. 1:
".....that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected."

To assist in carrying out the Department of Agriculture's part of this national program, a Flood Control Coordinating Committee was

established in the Department. The SCS representative was designated as chairman. Joint responsibility for carrying out the program was delegated by the Secretary to the Soil Conservation Service, the Forest Service, and the Bureau of Agricultural Economics. (48) Preliminary examination work was begun pursuant to Field Memorandum, SCS-528, August 12, 1937. (49)

An amendment to the 1936 Flood Control Act in 1937 (Sec. 3, 50 Stat. 876, 877) extended USDA's authorization to cover the watersheds of all waterways previously authorized to be surveyed by the Corps of Engineers. (50) This meant that USDA was authorized to make studies and investigations of the watersheds of all waterways covered by the Corps' 308 Reports. Neither the 1937 nor the 1938 Flood Control Acts authorized any works of improvement. However, while 1938 legislation did give the Secretary of Agriculture general authority to improve the watersheds of waterways on which Corps of Engineers improvement works had been authorized, this authority was never used.

Flood Prevention Surveys

The Flood Control Act of 1936 was amended and supplemented by the Flood Control Acts of 1937, 1938, 1939, and 1941. These acts provided the general legislative authority for the flood control program together with USDA's authorization to make surveys on specific watersheds and to receive appropriations for making surveys and for carrying out works of improvement. (51)

The Flood Control Acts authorized the USDA to work on the same streams that Congress had authorized the Corps of Engineers to work on, with one or two exceptions. The Department thus had been authorized to make examinations and surveys on drainage basins which comprised approximately three-fourths of the total area of the United States. (52) As of January 1, 1946, the Flood Control Acts included 913 separate authorizations for USDA to make preliminary examinations and surveys of watersheds or portions of watersheds of streams. (53)

The nature of the flood control authorizations imposed upon USDA the job of trying to separate out and measure the flood control benefits that would accrue from a land conservation program involving the entire farm operation of all the farms in a watershed. (54) Flood control benefits were defined as those which would accrue off-site. Conservation benefits were defined as those which would accrue on-site, largely through increased yields and farm income. (55) This became rather critical when a limitation was placed in the Flood Control Act of 1941 restricting the use of flood control funds to those works of improvement which the Department was not authorized to undertake through other programs. (56)

During the six-year period 1937-1943, preliminary examinations were initiated on 212 watersheds and completed on 160. They covered over 1,200,000 square miles or about one-half of the total area authorized to the Corps of Engineers for preliminary examination and survey. (57)

During this same six-year period, 41 detailed surveys were initiated. Reports on 17 of these were approved by the Secretary of Agriculture prior to June 30, 1943. Fifteen of these were cleared by the Bureau of the Budget for transmittal to Congress as of September 9, 1943. The completed surveys were expected to provide excellent public works programs for the post-war period when it was expected there would be a need for work requiring a maximum of labor and a minimum of equipment. (58)

The objectives of the USDA's program were (1) to aid in reducing floodwater damages by decreasing run-off and water-flow that contribute to flood flows, and (2) to reduce sediment damage to reservoirs and flood plains by reducing or preventing erosion. Program reliance was placed in improvement of the vegetal cover. This reduced run-off by increasing infiltration rate and water storage capacity of the soil. Such mechanical measures as contour cultivation, terracing, gully control devices, debris basins, and channel stabilization devices also were employed. (59)

One particular problem brought to light by the surveys concerned the allocation of flood control benefits between upstream and down stream measures. On many watersheds the proposed works of the Corps of Engineers already had "used up" such a large proportion of the flood damage reduction benefits that the USDA program, regardless of its value, could not be justified from the flood control point of view. (60)

As of July 20, 1953, the Department of Agriculture had completed 183 preliminary examinations and had transmitted to the Congress 25 detailed survey reports pursuant to the Flood Control Acts. Of these preliminary examinations, 153 had indicated sufficient flood water and sediment damage reduction benefits to warrant the making of detailed surveys. Departmental leadership on these examinations was as follows: SCS - 96; FS - 57. (61)

The 25 watersheds for which the detailed survey reports recommended the installation of watershed improvement programs under the Flood Control Acts and which were transmitted to Congress are: (1) Brazos, River (Tex.) (H.D. 396, 82nd Cong., 2d Sess.); (2) Buffalo, Creek (N.Y.) (H.D. 574, 78th Cong., 2d Sess.); (3) Colorado, Middle (Tex.) (H.D. 270, 78th Cong., 1st Sess.); (4) Coosa, River (Above Rome, Ga.) (Ga., Tenn.) (H.D. 236, 78th Cong., 2d Sess.); (5) Grand (Neosho) (Ark., Okla., Kans., Mo.) (H.D. 388, 82nd Cong., 1st Sess.); (6) Green, River (Ky., Tenn.) (H.D. 261, 82nd Cong., 1st Sess.); (7) Little Sioux (Iowa, Minn.) (H.D. 268, 78th Cong., 1st Sess.); (8) Little Tallahatchie (Miss.) (H.D. 892, 77th Cong., 2nd Sess.); (9) Los Angeles (Calif.) (H.D. 426, 77th Cong., 1st Sess.); (10) Savannah (N.C., S.C., Ga.) (H.D. 40, 83d Cong., 1st Sess.); (11) Youghiogheny (Pa., W. Va., Md.) (H.D. 39, 83d Cong., 1st Sess.); (12) Missouri (Mont., Wyo., Colo., N.D., S.D., Neb., Kans., Minn., Iowa, Mo.) (H.D. 373, 81st Cong., 1st Sess.); (13) Pee Dee (Va., N.C., S.C.) (H.D. 269, 78th Cong., 1st Sess.); (14) Potomac (Va., W. Va., Md., Pa.) (H.D. 269, 78th Cong., 1st Sess.); (15) Queen Creek (Ariz.) (H.D. 397, 82d Cong., 2d Sess.); (16) Santa Ynez (Calif.) (H.D. 518, 78th Cong., 2d Sess.); (17) Susquehanna, Lower (Rev. 7/53, not submitted); (18) Sny (Ill.) (H.D. 398, 82d Cong.,

2d Sess.); (19) Trinity (Tex.)(H.D. 708, 77th Cong., 2d Sess.); (20) Washita (Okla., Tex.)(H.D. 275, 78th Cong., 2d Sess.); (21) Yazoo (Miss.)(H.D. 564, 78th Cong., 2d Sess.); (22) Sevier Lake (Utah)(H.D. 406, 82d Cong., 2d Sess.); (23) Delaware River (N.Y., Pa., N.J., Del.)(H.D. 405, 82d Cong., 2d Sess.); (24) Pecos (Tex., N.M.)(H.D. 475, 82d Cong., 2d Sess.); (25) Scioto River (Ohio)(H.D. 409, 82d Cong., 2d Sess.). (62)

Eleven of these were authorized for implementation by the 1944 Flood Control Act. Of those not authorized, the plan for the Missouri River Basin merits some additional discussion.

Missouri River Basin Plan

The Army Corps of Engineers' "308" reports and studies by the Bureau of Reclamation during the 1920's and the 1930's began to define the over all water problems of the Missouri River Basin. The Corps prepared a plan for the basin emphasizing flood control and navigation. This plan was called the "Pick" plan after Division Engineer, Colonel Lewis A. Pick. The Bureau of Reclamation developed a plan for the Basin which stressed irrigation and hydroelectric power. It was called the "Sloan" plan after William G. Sloan who headed the study. The two plans were reconciled with relatively minor adjustments and called the "Pick-Sloan Plan". This plan was authorized by the Flood Control Act of 1944. (63)

Five dams were authorized and completed on the Missouri River downstream from the Fort Peck dam, which was completed in 1940. Their combined reservoir storage capacity was over 75 million acre-feet, including the Fort Peck reservoir. In addition to the main-stem dams, there were 103 dams and reservoirs authorized on the headwaters and various tributaries which would provide an additional 110 million acre-feet of storage. (64)

The Corps would be responsible for all the main-stem dams and those others with flood control and navigation as primary functions. The Bureau would be responsible for those upstream reservoirs whose primary functions would be irrigation and hydroelectric power generation. (65)

The Pick-Sloan Plan was not held in high esteem by all the residents of the Basin. The Conservation Federation of Missouri called attention to the following in 1944:

- At that time 36 major reservoirs were proposed for construction in Missouri by the Federal government and its agencies;
- These would flood out about 20,000 citizens and permanently inundate about 900,000 acres of the State's best valley farm lands.
- The average annual value of the loss of production from this acreage would be 18 million dollars. This was estimated to be three to four times the average annual flood loss. (66)

The problem was that the Pick-Sloan Plan "was lopsided because all it did was to try to control and use the water by impounding it after

it had run off the land into the big rivers; but what was really needed was first a program of land and water resource development that began to control and make use of the water on the land on which it fell and in the small streams - thus using the water all the way from the time it fell on the fields, forests and farms until it reached the big rivers". (67) Apparently others had the same feelings regarding the Pick-Sloan Plan, because USDA Secretary Brannan directed that a plan containing these principles be prepared. (68)

Gladwin E. Young was placed in charge of a work group to do this job. Each agency of the USDA was to cooperate and to provide the necessary staff. State Agricultural Colleges were asked to work with the group. In about a year an Agricultural Plan for the Missouri River Basin was completed. It was submitted to the Congress September 29, 1949, and published as House Document 373, 81st Cong., 1st Sess. The USDA plan attracted the interest of the press and the general public and came to be known as the "Young Plan". (69)

Along with the other USDA flood control survey reports, the USDA Missouri Basin Plan set "forth a broad program specifically designed to conserve and improve the soil for sustained productive use, protect and enhance the forest resource, abate flood and sediment damages, provide for more efficient land use through irrigation and drainage, protect the water resource,...." (70) These reports also were unique in that they placed the responsibility for implementation, operation and maintenance on the people who control and use privately owned land.

The "Young Plan" was one of the first reports to propose upstream flood water retarding structures to reduce flood flows. It contained proposals for from 14,000 to 16,000 such structures for a region containing about one-sixth of the area of the United States. (71)

These flood control surveys set the stage for the Watershed Protection and Flood Prevention program which was soon to follow.

Water Facilities Act of 1937

The Water Facilities Act of 1937 (P.L. 399, 75th Cong.), also known as the Pope-Jones Act, authorized the Secretary of Agriculture to plan and construct agricultural water storage and utilization projects in the arid and semiarid areas of the United States. The projects could be located either on federally or privately owned land. (72)

In July 1938, the Secretary of Agriculture directed the Soil Conservation Service to participate with the Bureau of Agricultural Economics and the Farm Security Administration in carrying out this program. It consisted of helping farmers and ranchers in the low-rainfall areas of the 17 Western States in building up water supplies through new installations, repair or enlargement of existing facilities, and developing conservation-management plans for those farms and ranches where work was to be done. (73)

Applications for assistance were made on an area basis. The Bureau of Agricultural Economics prepared the area plan, including justification for the project. The Soil Conservation Service provided the engineering and other technical assistance needed for implementation of the plan. The Farm Security Administration provided financial assistance through loans. Overall program guidance was provided from the Secretary's office by a Water Facilities Coordinator. (74)

On January 1, 1937, the Resettlement Administration, established on April 30, 1935, as an independent agency, was transferred to the Department of Agriculture. It was responsible for the welfare of poverty-stricken people on the land. Later in 1937 its name was changed to the "Farm Security Administration". Its most popular program was the supervised loan program. (75)

Responsibility for the action phases of the Water Facilities Program remained with SCS until July 1, 1942. At that time its responsibilities were transferred to the Farm Security Administration (Secretary's Memo. 969, Jan. 12, 1942). (76)

Land Utilization and Retirement of Submarginal Land Program

Title III of the Bankhead-Jones Farm Tenant Act of July 22, 1937, (P.L. 210, 75th Cong.)(7 U.S.C. 1010) authorized and directed the Secretary of Agriculture

"to develop a program of land conservation and land utilization, and in order thereby to correct maladjustments in land use, and thus assist in controlling soil erosion, reforestation, preserving natural resources, protecting fish and wildlife, developing and protecting recreational facilities, mitigating floods, preventing impairments of dams and reservoirs, conserving surface and subsurface moisture, protecting the watersheds of navigable streams, and protecting the public lands health, safety and welfare...."

This program was initiated by the Resettlement Administration. The responsibility for administering it was transferred to the Soil Conservation Service on November 1, 1938, (Secretary's Memo. 785, Oct. 6, 1938 and 790, Oct. 20, 1938).(77)

Under this program some dams were constructed for floodwater storage, recreation and other purposes. (78) At the time of the transfer of program responsibility to the SCS many of these dams were still under construction. The SCS completed, operated and maintained them until the program was transferred to the Forest Service on January 1, 1954. (79)

Case-Wheeler Program

The Water Conservation and Utilization Program authorized by the Case-Wheeler Act of August 11, 1939, (P.L. 398, 76th Cong., 1st Sess.)

directed the Secretary of the Interior "to undertake the construction, including acquisition of water rights, rights-of-way, and other interests in land, of water conservation and utilization projects in the Great Plains and arid and semiarid areas of the United States". Any money expended on these projects was to be repaid to the United States by the water users in not to exceed forty annual installments. The program was to provide assistance on privately owned land. (80)(81)

The Secretary of Agriculture was authorized to participate in the Case-Wheeler Program by Public Law 76-848, (54 Stat. 1119, Sections 590 Y - Z 10). Sections 590 Z-3 and Z-4 state:

"in order to further in the Great Plains and arid and semiarid areas of the U. S. an effective rehabilitation program, stabilization of the agricultural economy and maximum utilization of funds spent for relief purposes, the Secretary of Agriculture is authorized pursuant to cooperative agreement with the Secretary of the Interior (1) to arrange for the settlement of projects on a sound agricultural basis, and insofar as practicable, the location thereon of persons in need; (2) to extend guidance and advice to settlers thereon in matters of farm practice, soil conservation, and efficient land use; (3) to acquire agricultural lands within the boundaries of such projects, with titles, and at prices satisfactory to him; and (4) to arrange for the improvement of lands within the project boundaries, including clearing, leveling, and preparing them for distribution of irrigation water."

In practice, the Bureau of Reclamation, acting for the Secretary of the Interior, selected the project area, procured the land, developed the irrigation water supply or source, and the project irrigation water distribution system. The project was then turned over to the Department of Agriculture for development of on-farm distribution systems, including appropriate land preparation, and resale to private ownership, utilizing available loan programs. Initially the Bureau of Agricultural Economics handled the USDA phase of the program. It was later transferred to the SCS to administer (War Food Administrators Memo. 27 - Revision 1, Amendment 6). (82)

The program had considerable potential but came to an unfortunate end because of divided authorities. The Bureau too often did not give enough attention to the characteristics of the soils of the projects. Often, after development of the water supply and major distribution system, it was not possible to develop efficient on-farm systems due to soils. The program developed a bad reputation, even though some fair projects were developed. Finally it was terminated in 1960. (83)(84)

CHAPTER 3

POST WORLD WAR II ACTIVITIES (1944-1954)

Flood Control Act of 1944

The Flood Control Act of 1944 authorized the installation of the works of improvement contained in 11 of the survey reports completed by the Secretary of Agriculture under authority of the Flood Control Act of 1936. Sec. 13 of the 1944 Act stated in part:

"That the following works of improvement for run-off and waterflow retardation, and soil-erosion prevention, are hereby adopted and authorized in the interest of the national security and with a view toward an adequate reservoir of useful and worthy public works for the post-war construction program to be prosecuted by the Department of Agriculture, under the direction of the Secretary of Agriculture, in accordance with the plans of the respective reports hereinafter designated and subject to the conditions set forth therein:...." (85)

The watershed reports authorized for implementation were: Los Angeles River Basin; Santa Ynez River Watershed; Trinity River Basin (Texas); Little Tallahatchie River Watershed; Yazoo River Watershed; Coosa River Watershed (above Rome, Georgia); Little Sioux River Watershed; Potomac River Watershed; Buffalo Creek Watershed (New York), Buffalo, Cayuga and Cazenovia Creeks; Colorado River Watershed (Texas); Washita River Watershed. (86)

As approved by the Congress, these projects consisted mainly of accelerated land treatment measures and practices. They contained no structural measures. However, the Department's watershed reports began to include proposals for structural measures after 1948. Secretary Brannan's 1949 Missouri Basin Agricultural Plan contained proposals for structural measures estimated to cost about \$1 billion. The Fiscal Year 1951 USDA Appropriations Act contained language that permitted the 11 authorized projects to include upstream floodwater detention reservoirs, channel improvements, and other structural measures. (87)

Apparently this expanded authorization to include structural measures was anticipated in some sections of the country. When Congress appropriated funds for planning upstream flood prevention work in 1946, planning was started on the Sandstone Creek Subwatershed of the Washita River in Oklahoma. A subwatershed plan designed to reduce erosion and flood-water damages was developed by the soil conservation district supervisors, landowners, interested local organizations, and agencies of the Federal Government. The plan called for conservation treatment of the farmland and ranch land and for such structural measures as floodwater retarding dams, sediment-control structures, and channel improvement. (88)

The 24 floodwater detention structures would control the run-off from 70 percent of the watershed and protect 95 percent of the flood

USDA FLOOD PREVENTION
ANNUAL OBLIGATIONS
(11 AUTHORIZED WATERSHEDS)

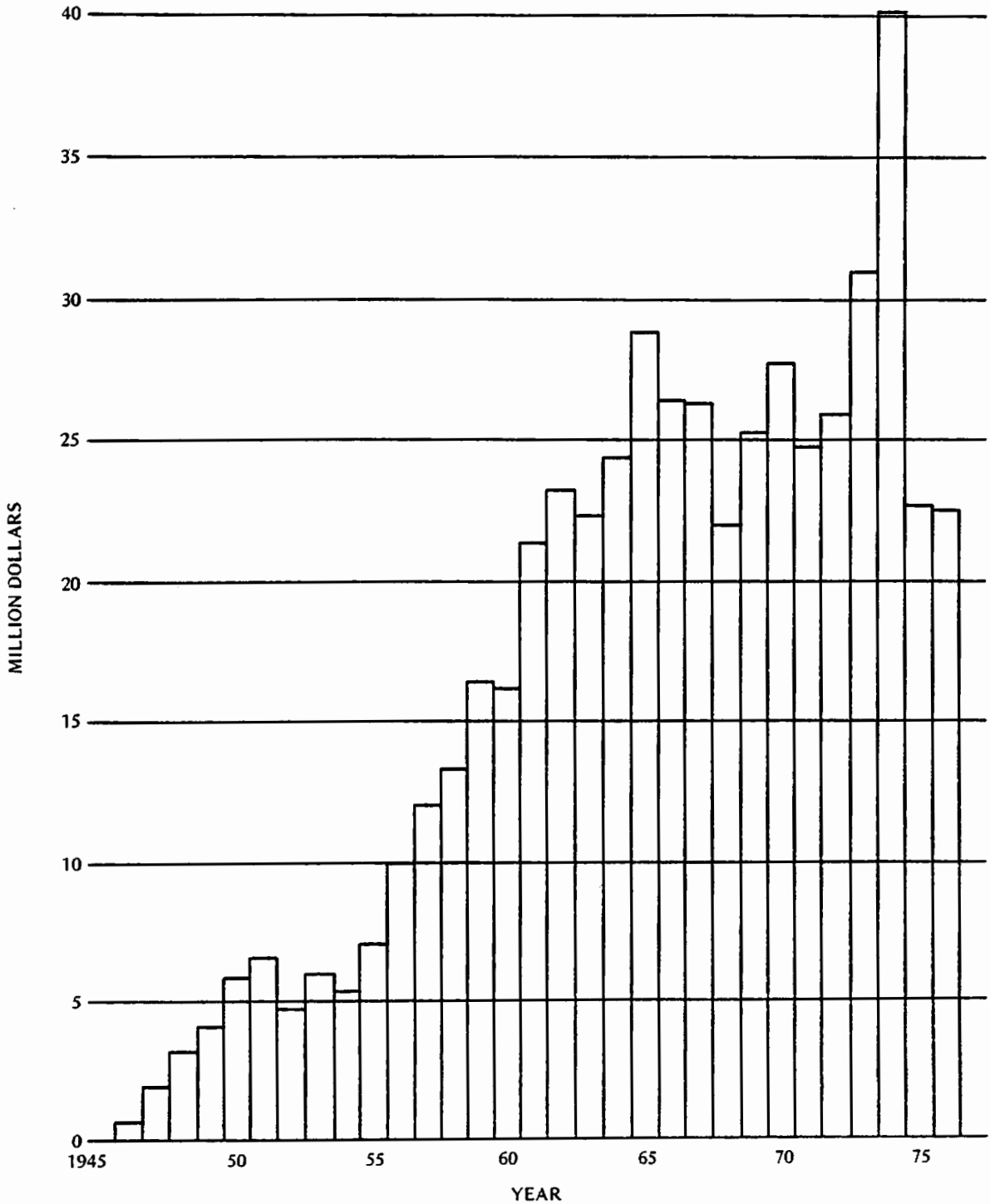


FIGURE 1

plain. The first construction contract was awarded in June 1950. It covered two structures. Construction of the 24 dams was completed in November 1952. Sandstone Creek was one of the first watersheds in the nation ready for the installation of a complete flood prevention program, including both land treatment and interrelated upstream measures. (89)

The 11 authorized watershed projects became the predecessors of the small watershed projects authorized by the Agricultural Appropriations Act of 1953 and the Watershed Protection and Flood Prevention Act of 1954 (P.L. 83-566). As the initial scope of the P.L. 83-566 projects was expanded, the same authorities were extended to the authorized watershed projects. Therefore, the same basic authorities and purposes are now included in the 11 authorized projects as in the P.L. 83-566 projects. (90)

The Soil Conservation Service and the Forest Service have joint responsibilities in discharging the Secretary of Agriculture's responsibility in this program. The SCS has program leadership and is responsible for work on privately owned land. The Forest Service is responsible for all watershed work in National Forests and provides technical assistance for work on other forest land in each watershed. (91)

The local people develop subwatershed work plans with the assistance of the SCS and Forest Service. Other agencies also assist when the need arises and they are requested to do so; i.e.: Federal financial assistance for land treatment is generally available through the Agricultural Conservation Program; loans may be available to eligible sponsors through the Farmers Home Administration after a plan has been approved; and the Economic Research Service appraises the impact of a project on the local economy. (92)

Cost sharing is such that local people put about the same amount of money into these projects as the Federal government. As of June 1975 the Federal government had spent \$464,452,000 and, as of June 1974, it is estimated the local people had spent \$379,636,000. Only one project has been reported as complete: Buffalo Creek, N.Y. in 1964. (93)

Annual obligations for the program are shown in figure 1 (SCS Budget and Finance Division Records).

Some examples of the accomplishments of these projects are:

- Yazoo-Little Tallahatchie Project.

"Total accomplishments throughout the life of the Project were brought into focus when the American Bicentennial Commission selected the Y-LT as one of the Nation's 200 Horizons on Display sites to commemorate America's birth. The selection was based on the Project's outstanding achievements in land rehabilitation which restored the economy and enhanced the quality of life for people of North Mississippi." (94)

During the period 1948-1976 the project, under the leadership of the Forest Service, had been responsible for planting 692,767,000 trees on 591,704 acres of badly eroded land. An additional 94,088,000 trees had been planted on 105,950 acres by other sources. (95)

- Accomplishments in the construction of multiple-purpose and flood-water retarding structures through fiscal year 1977 are: Washita River Project - 1,001; Trinity River Project - 847; Middle Colorado River Project - 268. (96)

Currently emphasis is being placed on the completion of planned land treatment measures, including tree planting and other forestry measures, in order to ensure a balanced watershed treatment program. Remaining planned structural measures are being installed as rapidly as available funds, land rights, and environmental constraints will permit.

Pilot Watershed Projects

A hearing was held on the Missouri Basin Agricultural Plan before a subcommittee of the House Committee on Agriculture in 1951. At this hearing, House Members supported their constituents demands that flood prevention in upstream watersheds be started without waiting for full river basin development. In 1952 the chairman of the subcommittee introduced a bill that would implement a small watershed program. This bill was stopped in the House Rules Committee by Public Works Committee members who sided with the bill's opponents, the Corps of Engineers and the Bureau of Reclamation. (97)

In 1953 the new chairman of the House Agriculture Committee re-introduced a small watershed bill embodying most of the features of the one introduced in the preceding Congress. Also, supporters of the small watershed program on the House and Senate Agricultural Appropriations Committees obtained an appropriation of \$5 million for a "pilot" watershed program. The object of this program was to demonstrate the effectiveness of 62 watershed projects in 33 states. Neither USDA nor Bureau of the Budget had submitted estimates for this program, nor was there any specific legislative authorization for it. (98)

The Secretary had assigned responsibility for administration of all of USDA's flood-control and river-basin investigation activities to SCS by Memorandum 1325, dated April 1, 1953. Therefore, SCS was assigned leadership responsibility for the "Pilot Watersheds Program", including responsibility for approving the areas to serve as pilot watersheds in a cooperative program and for helping local groups with technical phases of the work. (99)

All 62 watersheds were selected and designated between August 9 and December 8, 1953. (100) SCS immediately initiated planning activities in the 62 watersheds. The plans were designed to demonstrate the practicability of complete watershed protection as a means of conserving soil and water; of reducing flood water and sediment damages, silting of reservoirs, and impairment of stream channels; and of solving or alleviating other upstream land and water problems. (101)

These projects had another assigned function. They were to provide a basis for hydrologic and economic evaluation of the effects

USDA OBLIGATIONS PILOT WATERSHEDS (ANNUAL AND CUMULATIVE)

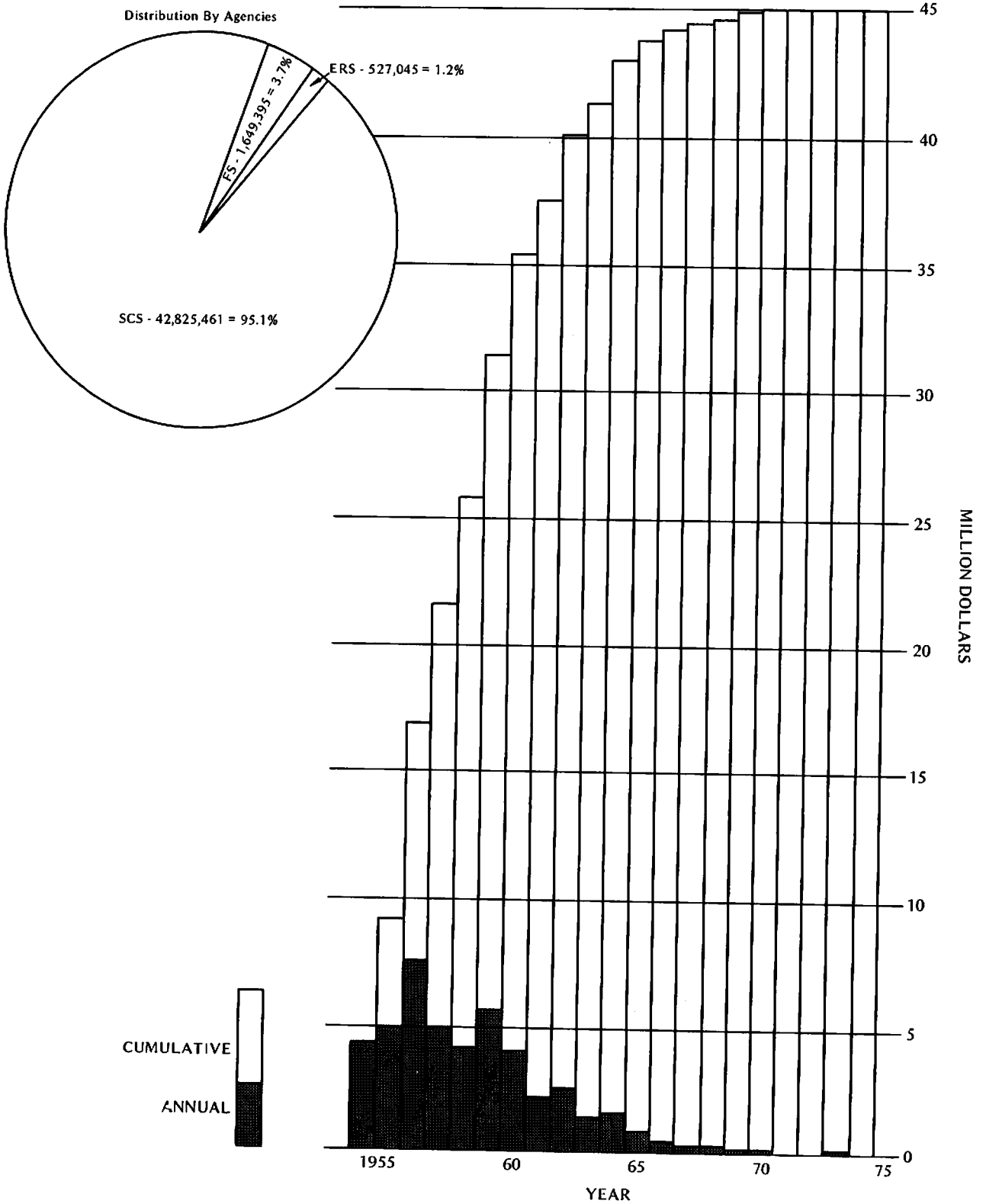


FIGURE 2

of the planned and installed works of improvement. Appropriate agreements were reached with U. S. Geological Survey to make the hydrologic evaluations and with the Economic Research Service to make the economic evaluations.

Distribution of the watersheds among the states was as follows:

Arizona - 1	New Mexico - 2
Arkansas - 1	New York - 4
California - 3	North Carolina - 1
Colorado - 1	North Dakota - 1
Georgia - 1	Ohio - 2
Idaho - 1	Oklahoma - 1
Illinois - 3	Pennsylvania - 1
Indiana - 1	South Carolina - 1
Iowa - 3	South Dakota - 1
Kansas - 6	Tennessee - 1
Kentucky - 4	Texas - 4
Minnesota - 2	Utah - 2
Missouri - 2	Virginia - 1
Montana - 1	Washington - 2
Nebraska - 4	West Virginia - 1
New Hampshire - 1	Wisconsin - 1
New Jersey - 1	(102)

In the operations phase of the program, planned works of improvement were installed on 54 of the original 62 projects. Only eight were terminated. In view of the limited participation of local people in the selection of these projects and the speed with which they were selected, this is an excellent record. The last projects were completed in 1972. Several of the project evaluation programs were terminated as early as 1957. The last one, Cow Bayou, Texas, was terminated in 1975. Total Federal obligations for this program amounted to \$43,634,379. No project funds have been obligated since 1974. (103) See figure 2 for annual and cumulative figures. (SCS Budget and Finance Division Records)

The only incomplete activities for this program are some reports from U. S. Geological Survey and Agricultural Research Service.

The accomplishments of this program consisted of an acceleration of the installation of land treatment measures on the farm lands of the watersheds and the installation of the following structural measures: (104)

Floodwater retarding dams (No.)	384
Channel work (Mi.)	287
Grade stabilization structures (No.)	475
Silt and debris basins (No.)	152
Floodways (Mi.)	132

Other Activities

In December 1938, the Secretary of Agriculture had transferred to the SCS that part of the work of the Division of Irrigation and Drainage of the Bureau of Agricultural Engineers that dealt with drainage and irrigation investigations, experiments, and demonstrations. (105) This action had been authorized on October 6, 1938, when the Secretary announced a realignment of USDA functions. (106) This transfer also made the SCS responsible for water supply forecasting (snow surveys) in the Western States. (107)

This action was highly significant to SCS in that prior to this time it had no authority to carry out work in the field of agricultural water management. Public Law 74-46 had been silent on this field of activity. The Agricultural Appropriations Act of 1940 (P.L. 76-159) June 30, 1939, and subsequent appropriations acts included specific language which authorized SCS to spend money on irrigation and drainage activities. (108) SCS became heavily involved in on-farm irrigation and drainage activities in the 1940's and 1950's.

On November 2, 1953, the Department underwent a reorganization. Under this action all soil conservation research, except investigations required for the national soil survey administered by the SCS, was transferred from the SCS to the Agricultural Research Service, effective date January 4, 1954. (109) The ARS had been established on November 2, 1953, under Secretary's Memo. 1320, Supplement 4. (110)

On August 17, 1954, an amendment was passed to the Water Facilities Act of 1937 (P.L. 597, 83d Cong.). This Amendment extended the water facilities loan program of the Farmers Home Administration to the entire Nation. It formerly was limited to the 17 Western States. This was an important action for the flood prevention programs which would utilize watershed loans throughout the U. S. (111)

The Watershed Protection and Flood Prevention Act (P.L. 83-566) was passed by Congress and signed by the President on August 4, 1954. The Act authorizes a permanent Nationwide program by which USDA provides technical and financial assistance to local watershed groups willing to assume responsibility for initiating, carrying out, and sharing the costs of upstream watershed conservation and flood control. SCS was given leadership responsibility for this program. It was designated as the USDA action agency with primary responsibility for USDA's cooperation with local organizations in small watersheds throughout the Nation. (112)

The watershed program is unique among Federal water programs. It is a Federally assisted program, not a Federal program. All actions pertaining to this program have to be initiated by local people. Decisions as to scope and scale of any project are theirs. The Federal government's commitment to cooperate on any proposed project is based on current policy, approved guidelines, and Congressional constraints. The first amendment to the basic act (P.L. 84-1018)(70 Stat. 1058) August 7, 1956, added authority to include agricultural water management purposes

in proposed projects. This was the first time SCS had been given legislative authority to provide assistance in irrigation and drainage. Prior to this time it had used transfer responsibilities and permitting language in appropriations acts.

The Watershed Protection and Flood Prevention Act was a landmark action for SCS. It added a new scope to its program responsibilities and provided it with a new set of incentives to get a complete conservation program with interrelated structural measures installed on the ground. Its importance is such that the entire next chapter of this document is devoted to this program.

CHAPTER 4

WATERSHED PROTECTION AND FLOOD PREVENTION PROGRAM

Legislation

The Watershed Protection and Flood Prevention Act (P.L. 83-566) was approved by the President on August 4, 1954. Robert J. Morgan, in his article "The Small Watershed Program", stated that this was a Soil Conservation Service program. It was wanted by the Soil Conservation Districts and their bipartisan congressional supporters. However, it was at variance with the river basin planning approach of the Truman administration. Also, it was not consistent with the "free enterprise" thinking of the Eisenhower administration. (113)

The Act authorized the Secretary of Agriculture to help local organizations plan and carry out works of improvement for flood prevention and agricultural aspects of water use and conservation on watersheds which did not exceed 250,000 acres in size. The assistance included conducting investigations and surveys, developing a watershed protection plan and an engineering plan for needed structural measures, determining the economic feasibility of the proposed plan, entering into agreements with local organizations for installation of planned works of improvement and their operation and maintenance, and providing financial and other assistance to the sponsoring local organizations. (114)

In addition to the size of the watershed, the Act provided that a plan could include no single structure with a total storage capacity in excess of 5,000 acre-feet. It also required that the local people were to pay an equitable share of the construction costs as determined by the Secretary. (115)

The basic authorities included in this Act were not new in the sense that they already existed in the 11 Authorized Flood Prevention Watersheds and the 62 Pilot Watersheds. However, these were restricted to specific watersheds. The authorities were new in that they were permanent and extended nationwide.

The Act terminated USDA activities under the Flood Control Act of 1936, as amended and supplemented, except for completion of the works of improvement in the 11 Authorized Watersheds as provided in the Flood Control Act of 1944. It also retained USDA's authority for participation in certain emergency measures for run-off retardation and soil erosion prevention as provided for in Sec. 216, Flood Control Act of 1950 (P.L. 81-516, 64 Stat. 163, 184).(116)

New authority for continuing river basin investigations was included in Sec. 6 of the Act, which provided that such investigations

could be carried out in cooperation with other Federal, state and local agencies. This was a significant feature because it permitted USDA to continue to work with the other Federal and state agencies on interagency river basin commissions and later with the Water Resources Council. (117)

In 1956, P.L. 566 was amended in response to complaints that the Act gave its local clientele less financial assistance than the programs of the Corps of Engineers and the Bureau of Reclamation provided. The complaints further stated that local interests who wished to participate could not meet their costs. The Administration opposed the amendments, but to no effect. (118)

The 1956 amendments were contained in P.L. 84-1018, 70 Stat. 1058 (August 7, 1956). They provided the following:

1. Required the Federal government to pay 100 percent of the construction costs allocated to flood prevention;
2. Added agriculture water management (irrigation and drainage) as eligible purposes;
3. Increased the maximum size of dams and reservoirs for upstream protection from 5,000 to 25,000 acre-feet, provided that not more than 5,000 acre-feet were devoted to flood protection;
4. Authorized the inclusion of works for municipal and industrial water supply. Such works were to be paid for by local interests, including engineering assistance for this purpose;
5. Authorized the Secretary to make loans up to \$5,000,000 to local organizations to finance their share of the costs;
6. Extended the program to include Hawaii, Alaska, Puerto Rico and the Virgin Islands. (119)

These amendments also changed the rules concerning agency review and congressional committee supervision. Those projects which do not require Federal financial contributions to construction costs in excess of \$250,000 and which do not include any single structure which provides more than 2,500 acre-feet of total capacity can be approved administratively without review by the other construction agencies. All larger projects require review by the Corps of Engineers. If they include irrigation works or affect public lands or wild life, they also must be reviewed by the Department of the Interior. (120)

The larger projects must be approved individually by the appropriate committees of the Senate and House of Representatives. Any plan which involves no single structure providing more than 4,000 acre-feet of total capacity comes under the jurisdiction of the Committee on Agriculture and Forestry of the Senate and the Committee on Agriculture of the House. Any plan involving a single structure providing more than 4,000 acre-feet of total storage capacity comes under the jurisdiction of the Committees on Public Works of the Senate and the House. (121)