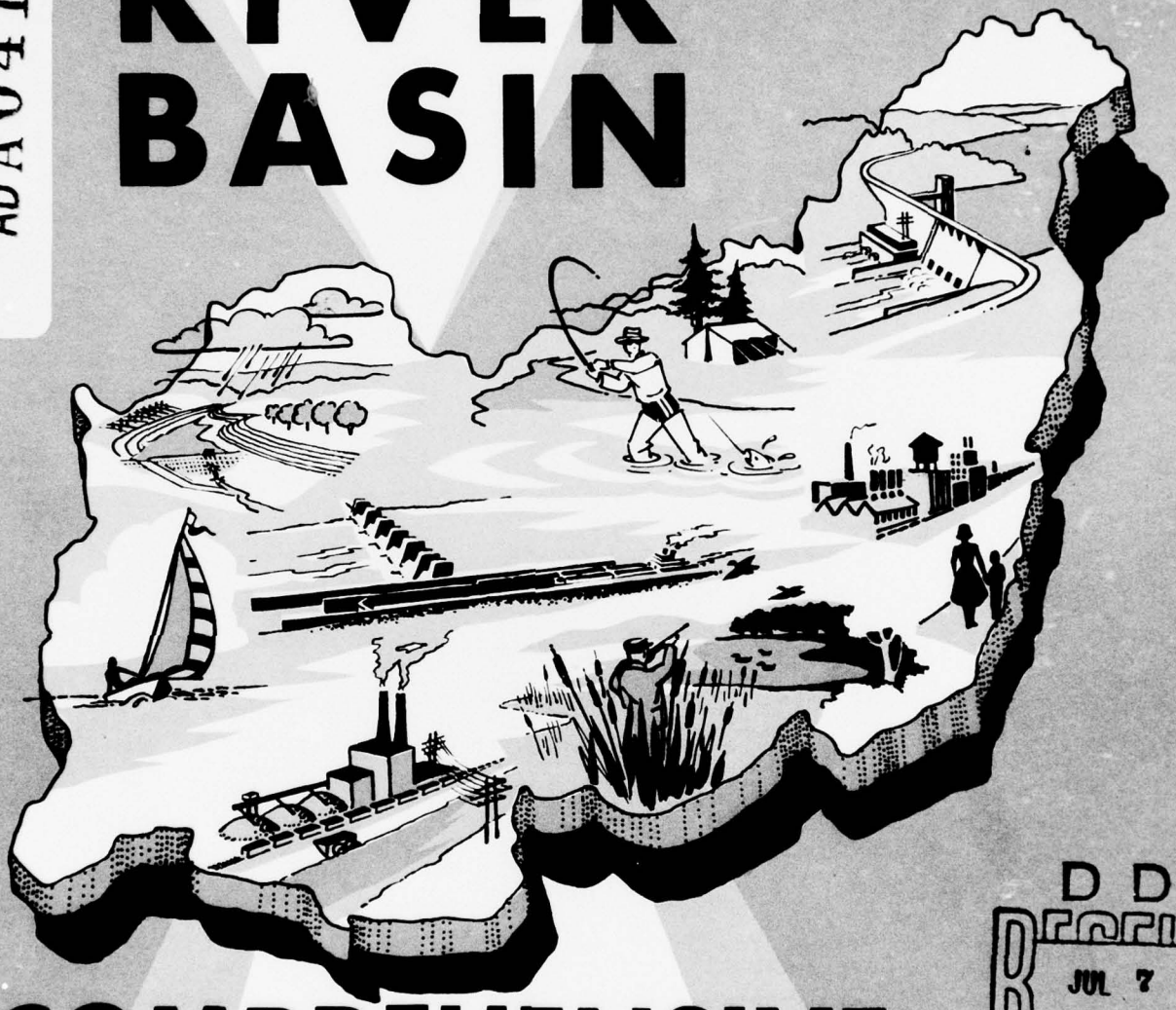
AD A041270

VOLUME II

OHIO RIVER BASIN



COMPREHENSIVE SURVEY

Appendix A

HISTORY OF STUDY

DDC RECEIVED JUL 7 1977 A

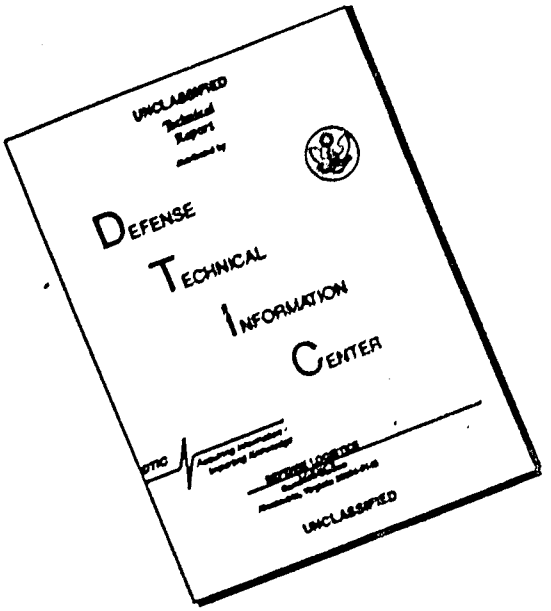
Prepared for
The Coordinating Committee
by
The Corps of Engineers
in cooperation with participating
Federal and state agencies.

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

DDC FILE COPY

HISTORY OF STUDY
OHIO RIVER BASIN COMPREHENSIVE SURVEY
Vol. II App. A

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

(1)

(6)

OHIO RIVER BASIN COMPREHENSIVE SURVEY.
Volume II.
APPENDIX A, HISTORY OF STUDY.

prepared for the Coordinating Committee

by

The Corps of Engineers
Department of the Army

in cooperation with the

Department of Agriculture

Department of Commerce

Department of Health, Education & Welfare

Department of the Interior

Federal Power Commission

States or Commonwealths of -

Illinois
Indiana
Kentucky
Maryland
New York
North Carolina
Ohio
Pennsylvania
Tennessee
Virginia
West Virginia

(11) August 1969

DDC
RECEIVED
JUL 7 1977
A

(12) 147p.

410257 New

Army Engineer Div, Ohio River, Cincinnati.

LB

410 257

ORIGINAL CONTAINS COLOR PLATES: ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

PREFACE

Documentation of events associated with this study could cover many items both broad in scope and detailed in nature. This document is a record of the most significant events of the study and reporting program. It is limited primarily to items important to study initiation, progress, and finalization. It is hoped that the contents will be of value to others conducting similar studies and an adequate permanent record of principal events as reference material.

The study eminated from concern for the adequacy of the existing comprehensive water resource development plans of the Ohio River main stem and tributaries.

The most recent comprehensive basin studies had been completed under the "308 Reports," House Document 308, 69th Congress, 1st Session, and reported in House Document 306, 74th Congress, 1st Session. This report formulated the original comprehensive plan for flood control and other purposes.

In 1954, Colonel J. L. Person, Ohio River Division Engineer, expressed to Major General S. D. Sturgis, Chief of Engineers, his concern as to the degree of flood control along the Ohio River and as to over-all water resources development in the Ohio Basin. As a result, storm and design flood studies were approved for the purpose of reviewing the effectiveness of existing works of improvement and the feasibility of projects authorized but not yet under construction.

The Committee on Public Works of the U.S. Senate adopted a resolution on May 16, 1955, sponsored by Senator Homer E. Capehart of Indiana requesting a review....."With a view to determining whether any modification in the present comprehensive plan for flood control and other purposes in the Ohio River Basin is advisable at this time." Thereafter, an expanded study program was established to evaluate the adequacy of the existing comprehensive basin development plans.

The study area comprises the Ohio River Basin exclusive of the Tennessee River Basin. It covers approximately 163,000 square miles, has a population of about 20 million persons and includes the major portions of the states of Ohio, Indiana, Kentucky and West Virginia; substantial parts of Pennsylvania, Illinois and Tennessee; and small areas of New York, Maryland, Virginia and North Carolina.

Initially, three principal study phases were contemplated.

Phase I. Verification or modification of the standard project and design floods for the Ohio Basin flood control system.

Phase II. Review of performance and adequacy of completed projects, those under construction, and those having prospect of early initiation; and reconsideration of the remaining authorized projects and possible alternatives in relation to needs indicated.

BY
DISTRIBUTION/AVAILABILITY CODES
Dist. AVAIL. and/or SPECIAL
A

Phase III. Reconsideration and restatement of the objectives of the basin-wide program and determination of the modification and supplementation of the presently authorized units of the program necessary for accomplishment of these objectives.

Preliminary studies on Phase I were initiated in FY 1956 by the Ohio River Division, with General Investigation funds. These were limited to basic hypothetical storm studies by the U.S. Weather Bureau and the Corps of Engineers until the initial allotment of funds for the comprehensive study was made in FY 1957. Activities were then broadened to include coordinated storm studies with Tennessee Valley Authority and the U.S. Geological Survey.

In 1962, when a national program for comprehensive river basin planning was initiated, this became the first "framework study" of that program.

The report is a result of coordinated cooperative efforts of the Departments of Agriculture; Army; Commerce; Health, Education and Welfare; Interior; the Federal Power Commission; and the States and Commonwealths of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia.

TABLE OF CONTENTS

Section		Page
	Preface	I
I.	AUTHORITY	I
II.	POLICIES AND PROCEDURES	5
III.	DEVELOPMENT HISTORY	6
IV.	STUDY HISTORY	9
	Study Schedule	17
	Coordinated Budget	19
	Chronology of Significant Events	21
V.	COORDINATING COMMITTEE	32
	Summary - First Meeting	42
	Summary - Second Meeting	45
	Summary - Third Meeting	47
	Summary - Fourth Meeting	50
	Summary - Fifth Meeting	54
	Summary - Sixth Meeting	57
	Summary - Seventh Meeting	61
	Summary - Eighth Meeting	65
	Summary - Ninth Meeting	69
	Summary - Tenth Meeting	74
	Summary - Eleventh Meeting	77
	Summary - Twelfth Meeting	81
	Summary - Thirteenth Meeting	85
	Summary - Fourteenth Meeting	88
	Summary - Fifteenth Meeting	93
Chart I - Critical Path		15
Table I - Distribution Dates		18
Table 2 - Coordinated Budget		20
Table 3 - Composition - Coordinating Committee		38
Table 4 - Coordinating Committee Meeting Participation		41
Attachment I - Guidelines for Framework Studies		

SECTION I - AUTHORITY

The Ohio River Basin Comprehensive Survey was authorized by a resolution adopted 16 May 1955 by the Committee on Public Works of the U.S. Senate. The resolution, sponsored by Senator Homer E. Capehart of Indiana, reads as follows:

> "RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the reports on the Ohio River published in House Document Numbered 306, Seventy-Fourth Congress, First Session, House Committee on Flood Control Document Numbered 1, Seventy-fifth Congress, First Session, and related reports, with a view to determining whether any modification in the present comprehensive plan for flood control and other purposes in the Ohio River Basin is advisable at this time."

The Chief of Engineers, U.S. Army Corps of Engineers, assigned the study to the Division Engineer, U.S. Army Engineer Division, Ohio River, on 19 May 1955.

The basic authorization is supplemented by the following four resolutions adopted 16 March 1964 by the Committee on Public Works of the U.S. Senate:

The resolution, sponsored by Senator Stephen M. Young of Ohio, reads as follows:

> "RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested and directed to review the reports of the Chief of Engineers on the Comprehensive Flood Control Plan for the Ohio and Lower Mississippi Rivers, published as Flood Control Committee Document Numbered 1, Seventy-fifth Congress, and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at this time, in light of the disastrous floods of March 1964, on the Ohio River and its tributaries, including a determination as to whether the existing flood protection projects in the State of Ohio, and at other areas along the Ohio River and its tributaries, in the States of Pennsylvania, Indiana, Illinois, West Virginia, Virginia, Kentucky and Tennessee, should be modified in any way at this time, and that such findings

and recommendations shall be incorporated into the comprehensive Ohio River investigation now under preparation by the Chief of Engineers, and, should it be deemed advisable by the Chief of Engineers, interim Survey reports shall be submitted to the Congress at the earliest possible date, on any project, river or locality, where the Chief of Engineers considers immediate authorization of flood control improvements necessary to prevent a recurrence of such damages."

The resolution, sponsored by Senator Birch Bayh of Indiana, reads as follows:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested and directed to review the reports of the Chief of Engineers on the Comprehensive Flood Control Plan for the Ohio and Lower Mississippi Rivers, published as Flood Control Committee Document Numbered 1, Seventy-fifth Congress, and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at this time, in light of the disastrous floods of March 1964, on the Ohio River and its tributaries, especially in the Indiana counties of Dearborn, Ohio, Switzerland, Jefferson, Scott, Clark, Floyd, Harrison, Washington, Crawford, Perry, Spencer, Warrick, Vanderburg, Posey, Gibson, Pike, Dubois, Martin, and Orange, including a determination as to whether the existing flood protection projects in the State of Indiana, and at other areas along the Ohio River and its tributaries, in the States of Pennsylvania, Ohio, Illinois, West Virginia, Virginia, Kentucky, and Tennessee, should be modified in any way at this time, and, that such findings and recommendations shall be incorporated into the comprehensive Ohio River investigation now under preparation by the Chief of Engineers, interim survey reports shall be submitted to the Congress at the earliest possible date, on any project, river or locality, where the Chief of Engineers considers immediate authorization of flood control improvements necessary to prevent a recurrence of such damages."

The resolution, sponsored by Senators John Sherman Cooper and Thruston B. Morton, of Kentucky, reads as follows:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the

River and Harbor Act, approved June 13, 1902, be, and is hereby requested and directed to review the reports of the Chief of Engineers on the Comprehensive Flood Control Plan for the Ohio and Lower Mississippi Rivers, published as Flood Control Committee Document Numbered 1, seventy-fifth Congress, and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at this time, in light of the disastrous floods of March 1964, on the Ohio River and its tributaries, including a determination as to whether the existing flood protection projects at Paducah, Uniontown, Hawesville, Louisville, Covington, Newport, Maysville, Russell, Ashland, Catlettsburg, and Taylorsville, all in the State of Kentucky, and at other areas along the Ohio River and its tributaries, in the States of Pennsylvania, Ohio, Indiana, West Virginia, Virginia, Kentucky and Tennessee, should be modified in any way at this time, and, that such findings and recommendations shall be incorporated into the comprehensive Ohio River investigation now under preparation by the Chief of Engineers, and, should it be deemed advisable by the Chief of Engineers, interim survey reports shall be submitted to the Congress at the earliest possible date on any project, river or locality, where the Chief of Engineers considers immediate authorization of flood control improvements necessary to prevent a recurrence of such damages."

The resolution, sponsored by Senator Jennings Randolph of West Virginia, reads as follows:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested and directed to review the reports of the Chief of Engineers on the Comprehensive Flood Control Plan for the Ohio and Lower Mississippi Rivers, published as Flood Control Committee Document Numbered 1, Seventy-fifth Congress, and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at this time, in light of the disastrous floods of March 1964, on the Ohio River and its tributaries, including a determination as to whether the existing flood protection projects in the State of West Virginia, and at other areas along the Ohio River and its tributaries, in the States of Pennsylvania, Ohio, Indiana, Illinois, Virginia, Kentucky, and Tennessee, should be modified in any way at this time, and that such findings and recommendations

shall be incorporated into the comprehensive Ohio River investigation now under preparation by the Chief of Engineers, and should it be deemed advisable by the Chief of Engineers, interim survey reports shall be submitted to the Congress at the earliest possible date on any project, river or locality, where the Chief of Engineers considers immediate authorization of flood control improvements necessary to prevent a recurrence of such damages."

On 24 March 1964, the Chief of Engineers directed the Division Engineer, Ohio River Division, to combine these study authorities with the investigation requested by the 16 May 1955 resolution.

Other Federal departments and agencies, states, and commonwealths participated in the study under authority contained in other laws and policy guidance documents. Significant among these are:

Federal Water Power Act of 1920, as amended.

Fish and Wildlife Act of 1934 as amended by the Fish and Wildlife Coordination Act of 1958.

Flood Control Act of 1944, as amended.

Watershed Protection and Flood Prevention Act (Public Law 566), as amended.

Federal Water Pollution Control Act (PL 84-660), as amended.

Senate Document No. 97, 87th Congress, Second Session.

Guidelines for Framework Studies, 10 February 1964, as revised June 1965 and October 1967.

Water Resources Planning Act (PL 89-80).

Reorganization Plan No. 2 of 1965 (U.S. Department of the Interior).

SECTION II - POLICIES AND PROCEDURES

The Ohio River Basin Comprehensive Survey has been guided by the policies, standards, and procedures contained in Senate Document Number 97, 87th Congress, 2nd Session, approved May 15, 1962.

> "The basic objective in the formulation of plans is to provide the best use, or combination of uses, of water and related land resources to meet all foreseeable short- and long-term needs.* * *
>
> "National economic development, and development of each region within the country, is essential to the maintenance of national strength and achievement of satisfactory levels of living. Water and related land resources development and management are essential to economic development and growth.* * *
>
> "Well-being of all of the people shall be the overriding determinant in considering the best use of water and related land resources. Hardship and basic needs of particular groups within the general public shall be of concern, but care shall be taken to avoid resource use and development for the benefit of a few or the disadvantage of many. In particular, policy requirements and guides established by the Congress and aimed at assuring that the use of natural resources, including water resources, safeguard the interests of all of our people shall be observed.* * *"

Prior to 1962, the studies were conducted under the normal policies and procedures for reports in response to Public Works Committee resolutions covering survey reports embodying recommendations for project authorization under the River and Harbor and Flood Control Acts. During the period 1962 to 1964, the study scope was changed to a comprehensive river basin "framework" type study. This change eliminated the need for detailed studies leading to project authorization and broadened the study to include an evaluation of the short- and long-term water and related land resource needs of the basin.

The scope and degree of detail for reporting is defined in "Guidelines for Framework Studies" (fully quoted in Attachment 1). In essence, they state that framework studies will be preliminary or reconnaissance-type investigations intended to provide broad-scaled analyses of water and related land resource problems and to furnish general appraisals of the probable nature, extent and timing of measures for their solutions. Furthermore, framework plans are to be based on initial planning steps using general relations, reasoned approximations, available data, and the judgment of experienced planners. Potential sites may be identified, but project formulation is not to be undertaken at any stage of framework planning.

SECTION III - DEVELOPMENT HISTORY

Early efforts to manage water can be traced back to 1808, when landowners in the Wabash River Basin built levees to protect their farms from floods. Later, some local groups were active in building levees and floodwalls which afforded partial protection against Ohio River floods. The great flood of 1913 prompted local people to take action in the Great Miami Basin of Ohio, and other localities subsequently attempted to solve tributary flood problems, using the technique developed there. In 1927, in accordance with the provisions of House Document No. 308, 69th Congress, 1st Session, basin-wide studies were undertaken for the first time in the Ohio River Basin.

A report presenting a "Comprehensive Plan for Improvement of the Ohio River Basin" was submitted to Congress on August 14, 1935, and printed as House Document No. 306, 74th Congress, 1st Session. This was one of the so-called "308" reports on major river basins throughout the nation.

Following the great flood of January 1937, and in response to a resolution of the House Committee on Flood Control dated February 10, 1937, a review of previous reports and other studies was made. The result was a new "Comprehensive Flood Control Plan for Ohio and Mississippi Rivers." The report, submitted to Congress on April 28, 1937, was printed as Committee Print No. 1, House of Representatives Committee on Flood Control, 75th Congress, 1st Session. It was the basis for formulation of the original comprehensive basin plan for flood control and other purposes which was authorized by the Flood Control Act of 1938.

The 1938 authorizations and those by previous acts were for construction of 79 reservoirs and 235 local protection projects. Subsequent legislation has altered the original plan by adding some projects, deleting some, and modifying features of others. On April 1, 1966, the authorized plan included 109 reservoirs and 263 local protection projects. At that time, 41 reservoirs and 65 local protection projects had been completed; 24 reservoirs and 19 local protection projects were under construction; and 18 reservoirs and four local protection projects were in preconstruction planning.

Commercial navigation on the streams of the Ohio River Basin has evolved from the early use of canoes and flatboats. State governments and private interests, in the early 1800's, built a remarkable network of canals, to link the larger tributaries, and connect with other waterways beyond the basin's boundaries. Federal participation in the basin's water development began in 1824 with the removal of sandbars in the Ohio River. The lock and dam at Davis Island, first to be constructed on the main stem of the Ohio River, was opened to commerce in 1885. Canalization was completed in 1929, with a nine-foot depth from Pittsburgh to the mouth of the river. Under a modernization program initiated in 1955, the original system of 51 locks and dams is being replaced by 19 high-lift structures.

Interstate agencies, states and political subdivisions including conservancy and watershed districts have played and are continuing to play an important role in water and related land resource planning and development programs. This is well illustrated by the achievements of the Miami and Muskingum Conservancy Districts, both public corporations chartered under the laws of the State of Ohio. Between 1915 and 1920, the Miami Conservancy District pioneered, without Federal or state financial aid, in the planning and construction of five major flood control impoundments and significant local protection works in the Great Miami River Basin. In the 1930's, the Muskingum Watershed Conservancy District, with Federal and state cooperation, planned and developed a system of 14 flood control reservoirs in the Muskingum River Basin using funds allocated by the Public Works administration.

Under Public Law 566, as amended, programs for flood prevention, storage of water for beneficial use and improved land treatment and management have been authorized for 74 upstream watersheds. These projects are planned and administered by local interests, with technical assistance and cost sharing provided by the U.S. Department of Agriculture through the Soil Conservation Service. Final plans for each such project are coordinated with and approved by the state or states concerned.

Reports of significant studies pertaining to local problem areas, tributary basins, or the Ohio River region which have been published since the basin-wide comprehensive study of 1937, include the following:

Muskingum River and Tributaries, HD 251, 84th Congress, 13 August 1943.

Cumberland River and Tributaries, Tennessee and Kentucky, HD 761, 79th Congress, 2nd Session, 20 May 1946.

The Ohio; Ten Rivers in America's Future, Vol. 2, Report of the President's Water Resources Policy Commission - 1950, U.S. Government Printing Office, Washington, D.C.

Cumberland River, Kentucky and Tennessee, SD No. 81, 83rd Congress, 2nd Session, 23 January 1953.

Headwater Reservoirs, Wabash River, HD 435, 84th Congress, 21 June 1956.

Big Sandy River and Tug and Levisa Forks, HD 184, 86th Congress, 23 June 1959.

Little Sandy River and Tygarts Creek, Kentucky, HD 440, 86th Congress, 29 June 1960.

Water Resources Activities in the United States, Select Committee on National Water Resources, Senate Report 29, 87th Congress, 1st Session, January 30, 1961.

French Creek Basin, Pennsylvania, HD 95, 87th Congress, 28 May 1962.

Kentucky River and Tributaries, Kentucky, HD 423, 87th Congress, 4 June 1962.

Twelvepole Creek, West Virginia, HD 520, 87th Congress, 13 August 1962.

Guyandotte River and Tributaries, HD 569, 87th Congress, 13 August 1962.

Scioto River Basin, Ohio, HD 587, 87th Congress, 27 September 1962.

Saline River and Tributaries, Illinois, HD 311, 88th Congress, 17 June 1964.

Chartiers Creek Basin, Pennsylvania, HD 302, 88th Congress, 6 May 1965.

Lafayette and Big Pine Reservoirs, Wabash River, Indiana, (Wabash Comprehensive Survey Interim #1), SD 29, 89th Congress, 26 May 1965.

Lincoln, Clifty Creek, and Patoka Reservoirs, Wabash River Basin, Indiana and Illinois, (Wabash Comprehensive Survey, Interim #2), HD 202, 89th Congress, 14 June 1965.

Martins Fork Reservoir, Upper Cumberland River Basin, Kentucky, HD 244, 89th Congress, 19 July 1965.

Hocking River Basin, Ohio, HD 287, 89th Congress, 7 September 1965.

SECTION IV - STUDY HISTORY

The Ohio River Basin Comprehensive Survey was accomplished during a period of evolution in national water resource planning. Although the basic concept of evaluating the adequacy of the comprehensive development plan for flood control and other purposes did not change, public needs, laws, and policies and concepts did. These include both need and public demand for adequate water supplies, water quality control in streams, hunting and fishing resources, general outdoor recreation facilities, land and water conservation throughout the basin. Legislation and national policies concerning water resource development have also changed a great deal during the study period.

A comprehensive study program was established in 1955 when the study began. Basic study needs were the development of hypothetical storms, floods, and low streamflow data. Following initial FY 1957 funding, cooperative studies by the Corps of Engineers, Tennessee Valley Authority, U.S. Geological Survey, and the Weather Bureau were undertaken to evaluate hydrologic and hydraulic conditions related to floods and low flows throughout the basin. During the period FY 1958 through FY 1960, activities were progressively expanded to include other agencies having interests directly related to hydrologic and hydraulic elements of flood control and low flow regulation problems. The objectives of the plan of survey, prepared in 1960, were:

> "a. Verification or modification of the standard project flood and design floods for the Ohio Basin flood control system.
>
> b. Review of performance and adequacy of completed works, those under construction and those prospective of early initiation and reconsideration of the remaining authorized projects and possible alternatives.

Upon completion of item b, the broader aspects of water resource development would be considered as follows:

> Determination of the modification and supplementation of the presently authorized projects and of others required in the flood control plan that would be necessary to accomplish needed development for other purposes."

The basic concept of the investigation was to make a comprehensive study of all water and related land resources, problems, and solutions, and to recommend necessary modifications to the existing comprehensive plan. In July 1963, the plan of survey was revised to modify the study objectives as quoted below:

> "The objectives of the Comprehensive Ohio River Basin Survey are the determination in broad terms of overall basin requirements for water and related land resource

development for municipal, industrial and agricultural water supply; water quality control; flood control and drainage; hydroelectric power; navigation; watershed protection and management; outdoor recreation; and fish and wildlife conservation; the appraisal of the capability of the presently authorized plan to meet indicated present and prospective needs; the formulation in general terms of a plan of development, including the indication of elements which would be required in the near future and the need for and priority of more detailed study of basin subareas."

Thus, the Ohio River Basin Comprehensive Survey became the first "framework" study within the meaning of Guidelines for Framework Studies (Attachment I) initially developed by the Interdepartmental Staff Committee, ad hoc Water Resources Council, and subsequently published in amended form by the Water Resources Council established under the Water Resources Planning Act of 1965 (PL 89-80).

Participating Federal agencies have exchanged information and coordinated their work directly among themselves and with appropriate state agencies as required. Periodic joint meetings of the Federal and state agencies at field level were held for the purposes of reviewing the progress of individual agency studies and for the exchange of data and information. Coordination at the working level through daily contacts, on an informal basis, among personnel of participating agencies has expedited the work and has fostered excellent working relationships. This method of coordination, along with the more formal meetings of the Coordinating Committee and the interagency working level groups, was essential for timely completion of the report and appendices.

State representatives furnished information on non-Federal projects and plans. Contacts were maintained during the study to assure full consideration to state and local views in the formulation of framework plans for water and related land resource development.

The Department of Agriculture's studies were made by the Soil Conservation Service, Economic Research Service, and Forest Service. An analysis in broad terms was made of current and long-range agricultural water problems and rural water management needs with regard to erosion control, flood prevention, drought, impaired drainage, and outdoor recreation in upstream watershed areas. Utilizing data available from basic economic studies, an inventory and classification was made of land and forest resources of the basin in terms of present and potential alternative uses, physical characteristics, productivity and management levels. Also, an inventory was made of the use of natural resources by agricultural and forest-based enterprises and related industries and their contributions to present and prospective economic activity and employment in the basin. Inventories were made of existing watershed protection projects constructed under Public Law 566. Also included were proposed improvements that are under investigation and those that

appear to have reasonable prospects of justification. The investigations developed, in general terms, upstream watershed improvements which were considered in the formulation of an overall plan of development for the basin.

The Bureau of the Census, Department of Commerce, furnished a special tabulation of 1958 Census of Manufacturers data which was required for the Projective Economic Study of the Ohio River Basin. The Weather Bureau furnished certain meteorological data under a cooperative program.

Investigations by the Bureau of Outdoor Recreation comprised an inventory of the going programs of public recreation agencies in the basin, and the number of visitors that can be accommodated. Present and projected needs for additional outdoor recreation opportunity that can be satisfied by water resources development were determined. Areas where the need is critical and those requiring more detailed studies were designated.

The U.S. Geological Survey verified and extended discharge stage-flow rating curves at key Ohio River and tributary gaging stations. Investigations were also made to provide a general description of the hydrology of the Ohio River Basin with emphasis on quantity and quality of ground water and its relation to surface water. The study was of reconnaissance type, based on prior reports and available data.

Bureau of Sport Fisheries and Wildlife studies encompassed a determination of the current demand for, and rate of growth of demand on, fish and wildlife resources; an inventory of existing and going programs in the basin concerned with fishing and hunting; the determination of the need for additional fishing and hunting opportunity that can be satisfied by water resources development; and the designation of subareas or key areas where needs are greatest. The Bureau of Commercial Fisheries analyzed potential commercial fishing production capabilities and demands.

The National Park Service identified and evaluated historical, archeological and scenic resources with a view to the preparation of recommendations for preservation of these values in basin development.

The Southeastern Power Administration studies were made in cooperation with the Federal Power Commission to determine future power needs in the basin and to identify the potential for hydroelectric power developments. Included were investigations on power requirement of public bodies and cooperatives.

The Bureau of Mines furnished information pertaining to the present availability of the basin's mineral resources, their potential development and future outlook.

Federal Power Commission, in collaboration with the Southeastern Power Administration, furnished data on existing electric power facilities; made projections of future electric power requirements; determined potential for hydroelectric power development, both conventional and pumped storage; and determined water requirements for electric power generation.

The Federal Water Pollution Control Administration, established within the Department of Health, Education and Welfare on December 31, 1965 under the provisions of the Water Quality Act of 1965 (PL 89-234), was transferred to the Department of the Interior on May 10, 1966 under the provisions of Reorganization Plan Number 2 of 1966. Assuming certain of the study functions initially undertaken by the Public Health Service, in accordance with the Interdepartmental Agreement of September 2, 1966, it determined present and estimated future needs for municipal and industrial water supply and water quality control. These were compared with the availability of surface and ground water in areas of need to indicate whether storage and regulation of surface water might be necessary. The Public Health Service, Department of Health, Education and Welfare, having retained certain responsibilities for health aspects of water resources planning, reviewed and furnished comments upon pertinent aspects of the study.

States and commonwealths concerned contributed useful data and information and participated in the formulation of the comprehensive plan of development. Federal agencies participating in the study coordinated their investigations with representatives of the appropriate state agencies to insure that full consideration was given to their views. The states furnished data on existing and proposed non-Federal projects, and information on laws and policies which define the functions and the authority of state agencies and political subdivisions in the development and management of water and related land resources.

As the lead agency with overall responsibility, the Corps of Engineers was supported by the coordinated efforts of other Federal agencies, states and commonwealths. Specific studies by others engaged in this survey are contained in the following appendices to the Main Report:

Volume	Appendix	Title	Author Agency
II	A	History of Study	U.S. Army Engr Div, Ohio River, Corps of Engrs
III	B	Projective Economic Study	U.S. Army Engr Div, Ohio River, Corps of Engrs (prepared by A. D. Little, Inc., under contract)
IV	C	Hydrology	U.S. Army Engr Div, Ohio River, Corps of Engrs

appear to have reasonable prospects of justification. The investigations developed, in general terms, upstream watershed improvements which were considered in the formulation of an overall plan of development for the basin.

The Bureau of the Census, Department of Commerce, furnished a special tabulation of 1958 Census of Manufacturers data which was required for the Projective Economic Study of the Ohio River Basin. The Weather Bureau furnished certain meteorological data under a cooperative program.

Investigations by the Bureau of Outdoor Recreation comprised an inventory of the going programs of public recreation agencies in the basin, and the number of visitors that can be accommodated. Present and projected needs for additional outdoor recreation opportunity that can be satisfied by water resources development were determined. Areas where the need is critical and those requiring more detailed studies were designated.

The U.S. Geological Survey verified and extended discharge stage-flow rating curves at key Ohio River and tributary gaging stations. Investigations were also made to provide a general description of the hydrology of the Ohio River Basin with emphasis on quantity and quality of ground water and its relation to surface water. The study was of reconnaissance type, based on prior reports and available data.

Bureau of Sport Fisheries and Wildlife studies encompassed a determination of the current demand for, and rate of growth of demand on, fish and wildlife resources; an inventory of existing and going programs in the basin concerned with fishing and hunting; the determination of the need for additional fishing and hunting opportunity that can be satisfied by water resources development; and the designation of subareas or key areas where needs are greatest. The Bureau of Commercial Fisheries analyzed potential commercial fishing production capabilities and demands.

The National Park Service identified and evaluated historical, archeological and scenic resources with a view to the preparation of recommendations for preservation of these values in basin development.

The Southeastern Power Administration studies were made in cooperation with the Federal Power Commission to determine future power needs in the basin and to identify the potential for hydroelectric power developments. Included were investigations on power requirement of public bodies and cooperatives.

The Bureau of Mines furnished information pertaining to the present availability of the basin's mineral resources, their potential development and future outlook.

Federal Power Commission, in collaboration with the Southeastern Power Administration, furnished data on existing electric power facilities; made projections of future electric power requirements; determined potential for hydroelectric power development, both conventional and pumped storage; and determined water requirements for electric power generation.

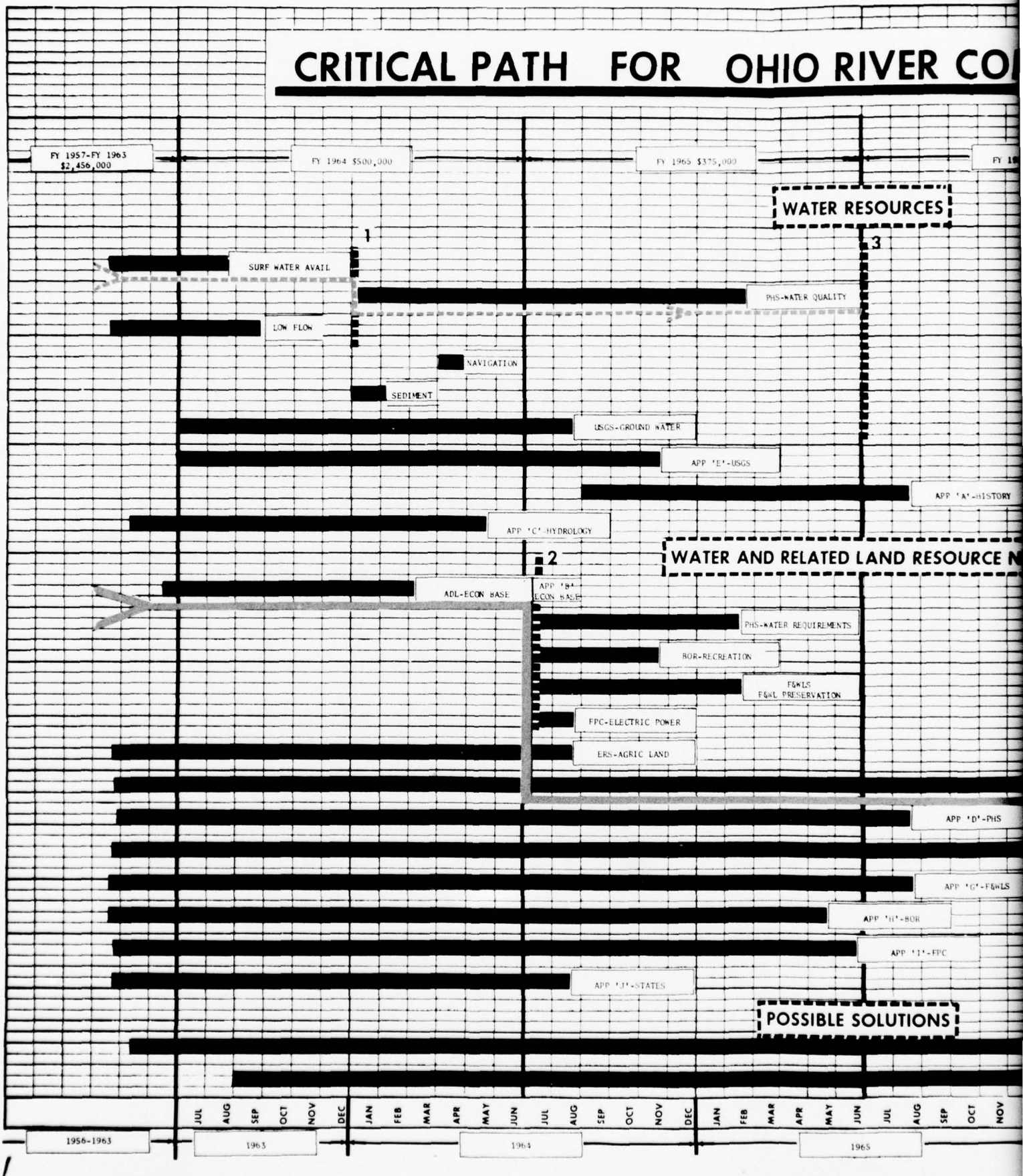
The Federal Water Pollution Control Administration, established within the Department of Health, Education and Welfare on December 31, 1965 under the provisions of the Water Quality Act of 1965 (PL 89-234), was transferred to the Department of the Interior on May 10, 1966 under the provisions of Reorganization Plan Number 2 of 1966. Assuming certain of the study functions initially undertaken by the Public Health Service, in accordance with the Interdepartmental Agreement of September 2, 1966, it determined present and estimated future needs for municipal and industrial water supply and water quality control. These were compared with the availability of surface and ground water in areas of need to indicate whether storage and regulation of surface water might be necessary. The Public Health Service, Department of Health, Education and Welfare, having retained certain responsibilities for health aspects of water resources planning, reviewed and furnished comments upon pertinent aspects of the study.

States and commonwealths concerned contributed useful data and information and participated in the formulation of the comprehensive plan of development. Federal agencies participating in the study coordinated their investigations with representatives of the appropriate state agencies to insure that full consideration was given to their views. The states furnished data on existing and proposed non-Federal projects, and information on laws and policies which define the functions and the authority of state agencies and political subdivisions in the development and management of water and related land resources.

As the lead agency with overall responsibility, the Corps of Engineers was supported by the coordinated efforts of other Federal agencies, states and commonwealths. Specific studies by others engaged in this survey are contained in the following appendices to the Main Report:

Volume	Appendix	Title	Author Agency
II	A	History of Study	U.S. Army Engr Div, Ohio River, Corps of Engrs
III	B	Projective Economic Study	U.S. Army Engr Div, Ohio River, Corps of Engrs (prepared by A. D. Little, Inc., under contract)
IV	C	Hydrology	U.S. Army Engr Div, Ohio River, Corps of Engrs

Volume	Appendix	Title	Author Agency
V	D	Water Supply and Water Pollution Control	Federal Water Pollution Control Administration, Dept of the Interior
VI	E	Ground Water	U.S. Geological Survey, Dept of the Interior
VII	F	Agriculture	Soil Conservation Service, Dept of Agriculture (includes studies by Economic Research Service and U.S. Forest Service)
VIII	G	Fish and Wildlife Resources	Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service, Dept of the Interior (includes studies by Bureau of Commercial Fisheries)
IX	H	Outdoor Recreation	Bureau of Outdoor Recreation, Dept of the Interior (initiated by the National Park Service)
X	I	Electric Power	Federal Power Commission
XI	J	State Laws, Policies and Programs	Illinois Indiana Kentucky Maryland New York North Carolina Ohio Pennsylvania Tennessee Virginia West Virginia
XII	K	Development Program Formulation	U.S. Army Engr Div, Ohio River, Corps of Engrs
XIII	L	Navigation	U.S. Army Engr Div, Ohio River, Corps of Engrs
XIV	M	Flood Control	U.S. Army Engr Div, Ohio River, Corps of Engrs


CRITICAL PATH FOR OHIO RIVER CO
FY 1957-FY 1963
$2,456,000
FY 1964 $500,000
FY 1965 $375,000
WATER RESOURCES
1
3
SURF WATER AVAIL
PHS-WATER QUALITY
LOW FLOW
NAVIGATION
SEDIMENT
USGS-GROUND WATER
APP 'E'-USGS
APP 'A'-HISTORY
APP 'C'-HYDROLOGY
2
WATER AND RELATED LAND RESOURCE N
ADL-ECON BASE
APP 'B'
ECON BASE
PHS-WATER REQUIREMENTS
BOR-RECREATION
F&WLS
F&WL PRESERVATION
FPC-ELECTRIC POWER
ERS-AGRIC LAND
APP 'D'-PHS
APP 'G'-F&WLS
APP 'H'-BOR
APP 'I'-FPC
APP 'J'-STATES
POSSIBLE SOLUTIONS
JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV
1956-1963
1963
1964
1965

OHIO RIVER COMPREHENSIVE SURVEY

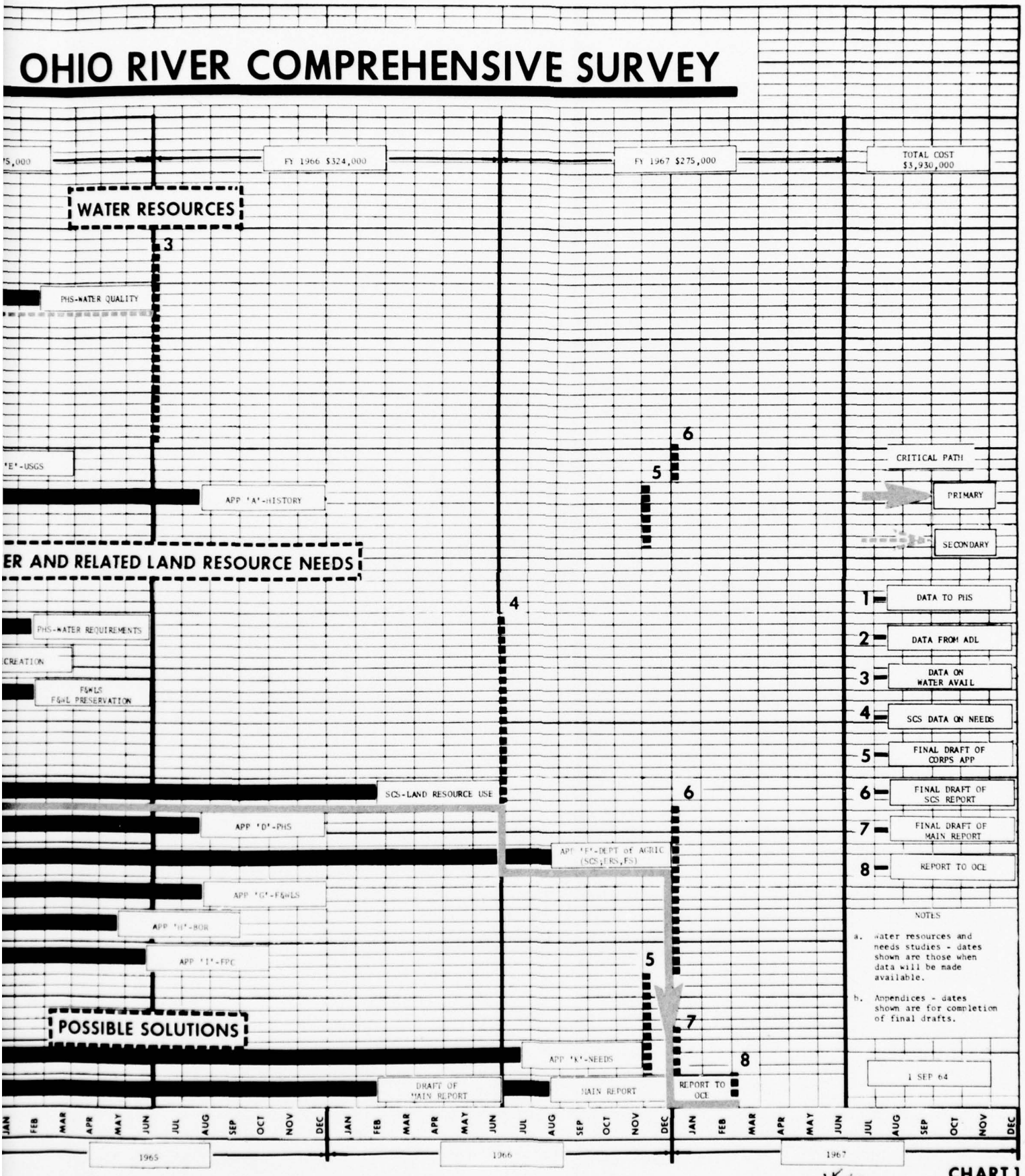


CHART 1

2

Study Schedule

In planning and coordinating the study schedule for the Ohio River Basin Comprehensive Survey, the Performance Evaluation and Review Technique (PERT) was employed. Determination of the critical path was an essential part of the PERT analysis. The critical path is the longest one, in time, of the numerous paths of activities to be covered. If the time schedule of events on the critical path is not met, the overall study cannot be completed on time, even if all other elements are finished on or ahead of schedule.

The critical path method (CPM) has been used successfully for construction planning with the duration of activities generally measured in man-days. The duration of planning activities for the Ohio River Basin Comprehensive Survey was charted on the basis of time only, with the unit expressed in months.

The study schedule was based upon a concept of organized sequential development of study components. Target dates were established at significant time-phase points in the investigation to insure meeting the report completion date. The duration of each major activity was projected and its completion date related to target dates. Activities finished early would have slack time. Those completed on the target date would be on the critical path. Designed to show the duration of the study and portray vital information concerning requirements for meeting deadlines, the critical path method was not generally understood or accepted by study participants, and consequently, it was of limited usefulness.

The first CPM schedule was developed in 1963. Subsequent changes in study scope necessitated major modifications in work activities and assignments. Chart I shows the CPM schedule developed in 1964. It was revised further in 1965 and 1966. Table I reflects the actual progress of major elements of the study and the dates when initial and formal review drafts of the several appendices and the Main Report were distributed.

PRECEDING PAGE BLANK-NOT FILMED

TABLE I

DISTRIBUTION DATES

Appendix	Informal Review Draft	Formal Review Draft
A	9 June 1966	-
B	29 June 1964	4 September 1964
C	15 March 1966	14 April 1967
D	2 June 1966	15 August 1967
E	4 March 1966	30 March 1967
F	7 July 1966	2 March 1967
G	28 January 1966	14 April 1967
H	1 November 1965	2 March 1967
I	12 April 1966	5 April 1967
J - States		11 January 1968
Illinois	September 1966	
Indiana	July 1966	
Kentucky	April 1966	
Maryland	September 1966	
New York	September 1966	
North Carolina	May 1966	
Ohio	August 1965	
Pennsylvania	August 1966	
Tennessee	March 1966	
Virginia	August 1965	
West Virginia	April 1966	
K	12 October 1967	4 October 1968
L	15 September 1966	5 September 1968
M	1 August 1966	21 May 1968
Main Report	23 February 1968	11 October 1968

Coordinated Budget

For Fiscal Years 1957 through 1962, study funds were appropriated directly to the Department of Army (Corps of Engineers), and transfers were made to other agencies participating. After Fiscal Year 1962 other departments received funds by direct appropriation. During Fiscal Years 1963 and 1964, the Corps of Engineers and other agencies coordinated their budget requests at field level, but separate requests were made to Congress following regular departmental budgetary procedures. Coordinated budgets were developed for Fiscal Years 1965, 1966 and 1967 based on procedures established by the Water Resources Council. This enabled the Council to coordinate budget requests submitted to Congress.

The coordinated budget requests for Fiscal Years 1965, 1966 and 1967 were submitted in the form of a report covering: (1) History and Coordination; (2) Summary Justification; (3) Agency Justifications; and (4) Coordinated Comprehensive River Basin Planning Estimates - a tabulation of budget requests by fiscal years.

For the Ohio River Basin Comprehensive Survey, the Division Engineer, Ohio River Division, coordinated interdepartmental field budget requests. As an initial step for each fiscal year, he called a meeting of all federal agencies participating. At these meetings agreement was reached on each agency's request that would be compatible with its part in the overall study.

Each agency requesting funds submitted justification sheets which explained the nature and scope of its studies for the ensuing fiscal year. Similar justification for the cost of the overall study was provided on a summary justification sheet. The budget allotments by fiscal years are shown on Table 2. This table indicates the direct appropriation of funds as well as the amounts transferred by the Corps of Engineers to other agencies. Studies by the Federal Power Commission, the Southeastern Power Administration and states were accomplished with other funds. The cost of these studies has not been estimated.

TABLE 2

COORDINATED BUDGET

OHIO RIVER BASIN COMPREHENSIVE SURVEY
ALLOTMENTS FOR ENTIRE STUDY BY FISCAL YEARS

	Method of Financing	Total Cost ($1,000)	FY Allocations in $1,000 Dollars										
			1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
I PROGRAM													
Dept of Agriculture - Total Program		633.4	-	-	-	-	-	10.0	106.2	102.3	247.5	161.0	72.0
Soil Conservation Service	Direct	(412.4)	-	-	-	-	-	-	(16.2)	(14.7)	(190.5)	(131.0)	(60.0)
	Transfer fm Army	(25.2)	-	-	-	-	-	-	(20.0)	(5.0)	(0.2)	-	-
Forest Service	Direct	(52.2)	-	-	-	-	-	-	-	(12.1)	(25.1)	(11.0)	(4.0)
Economic Research Service	Direct	(35.6)	-	-	-	-	-	-	-	(5.5)	(3.1)	(13.0)	(8.0)
	Transfer fm Army	(174.0)	-	-	-	-	-	(10.0)	(70.0)	(65.0)	(29.0)	-	-
Dept of Army - Total Program		3,075.8	100.0	210.0	352.0	329.0	329.0	423.5	308.4	230.0	233.8	280.1	280.0
	Direct	3,075.8	(100.0)	(210.0)	(352.0)	(329.0)	(329.0)	(423.5)	(308.4)	(230.0)	(233.8)	280.1	280.0
Dept of Interior - Total Program		578.3	-	-	4.0	61.0	61.0	43.3	74.3	160.0	112.0	57.1	5.0
Outdoor Recreation	Transfer fm Army	(128.4)	-	-	-	-	-	(6.3)	(35.3)	(53.0)	(24.0)	(3.2)	-
Geological Survey	Transfer fm Army	(215.0)	-	-	(4.0)	(61.0)	(50.0)	-	-	(60.0)	(40.0)	-	-
Sport Fisheries & Wildlife	Transfer fm Army	(217.7)	-	-	-	-	(11.0)	(37.0)	(39.0)	(47.0)	(48.0)	(35.7)	-
National Park Service	Direct	(7.2)	-	-	-	-	-	-	-	-	-	(7.2)	-
Bureau of Mines	Transfer fm Army	(10.0)	-	-	-	-	-	-	-	-	-	(5.0)	(5.0)
Southeastern Power	Direct		Studies accomplished with regular operating funds. Cost not estimated.										
Dept of Health, Education & Welfare - Total Program		506.1	-	-	-	-	10.0	23.2	26.7	130.0	153.7	102.5	-
	Direct	(406.2)	-	-	-	-	-	-	-	(150.0)	(153.7)	(102.5)	-
	Transfer fm Army	(99.9)	-	-	-	-	(10.0)	(23.2)	(26.7)	(40.0)	-	-	-
Federal Power Commission - Total Program		58.0	-	-	-	-	-	-	-	-	25.0	18.0	15.0
Bureau of Power	Direct	(58.0)	-	-	-	-	-	-	-	-	(25.0)	(18.0)	(15.0)
Four Department Total Program		4,317.6	100.0	210.0	356.0	390.0	400.0	500.0	516.1	682.4	772.4	618.7	372.0
II APPROPRIATIONS TO THE FOUR DEPARTMENTS - TOTAL		4,317.6	100.0	210.0	356.0	390.0	400.0	500.0	516.1	682.4	772.4	618.7	372.0
Department of Agriculture - Total		500.2	-	-	-	-	-	-	16.2	32.3	218.7	161.0	72.0
Soil Conservation Service		(412.4)	-	-	-	-	-	-	16.2	14.7	(190.5)	(131.0)	(60.0)
Forest Service		(52.2)	-	-	-	-	-	-	-	(12.1)	(25.1)	(11.0)	(4.0)
Economic Research Service		(35.6)	-	-	-	-	-	-	-	(5.5)	(3.1)	(13.0)	(8.0)
Department of Army - Total		3,946.0	100.0	210.0	356.0	390.0	400.0	500.0	493.9	500.1	375.0	330.0	285.0
Department of Interior - Total		7.2	-	-	-	-	-	-	-	-	-	7.2	-
National Park Service		(7.2)	-	-	-	-	-	-	-	-	-	(7.2)	-
Department of Health, Education & Welfare - Total		406.2	-	-	-	-	-	-	-	150.0	153.7	102.5	-
Federal Power Commission - Total		58.0	-	-	-	-	-	-	-	-	25.0	18.0	15.0
Bureau of Power		(58.0)	-	-	-	-	-	-	-	-	(25.0)	(18.0)	(15.0)

Chronology of Significant Events

The 16 May 1955 resolution of the Senate Committee on Public Works requesting that the Board of Engineers for Rivers and Harbors undertake a review study for the Ohio River Basin initiated the series of events which, collectively, constitute the Ohio River Basin Comprehensive Survey.

Fiscal Year 1955

The development of hypothetical storms for Ohio River Standard Project Flood was discussed in a conference held between staffs of the Chief of Engineers and Ohio River Division Engineer. Discussions with the U.S. Weather Bureau Hydrometeorological Section were initiated.

Fiscal Year 1956

The Division Engineer, District Engineers, and staff personnel conferred on study objectives and scope. Steering and Liaison Committees were appointed. A preliminary plan of work was developed and work on development of storm data was assigned to Districts.

A conference was held between staffs of the Chief of Engineers, Division Engineer, and Hydrometeorological Section of the U.S. Weather Bureau. The Bureau was requested to assist in study of proposed storm sequences and transpositions for project flood study.

Ohio River Division and District staffs held a conference on the hydraulic and hydrologic study program.

Fiscal Year 1957

Weather Bureau hydrometeorological studies were completed.

Work was started on development of basic hydrologic data. Flood damage studies were initiated.

Hypothetical flood data for project flood study was developed.

The Tennessee Valley Authority furnished Tennessee River flow data for hypothetical floods.

Fiscal Year 1958

Basic hydrologic data studies were completed.

Preliminary analysis of hypothetical floods was completed and three of these were selected for detailed study.

Fiscal Year 1959

Hydrographs for three hypothetical floods were developed and reservoir operation studies on these floods were started.

Work was started by the U.S. Geological Survey on extension of stage-discharge rating curves at key Ohio River and tributary gaging stations.

Flood damage studies of the Pittsburgh area were initiated.

TVA hypothetical flood studies were completed.

Preliminary discussions were undertaken with the U.S. Fish and Wildlife Service on studies for the Ohio River Basin.

Compilation of data was started for computation of natural and modified flood frequencies.

Fiscal Year 1960

Reservoir operation studies on floods of past record were begun.

TVA furnished data on Tennessee River natural and modified flood flows for floods of past record.

Work progress on extending river stage-discharge rating curves was discussed in conferences between Ohio River Division, U.S. Geological Survey and Districts.

Discussions were held with the U.S. Public Health Service concerning the Ohio Basin study. Additional conferences were held with U.S. Fish and Wildlife Service on its potential participation.

Flood damage surveys of the Ohio River flood plain from Portsmouth, Ohio, to Foster, Ky. were initiated by Huntington District.

Model tests were started on a hypothetical flood to establish characteristics of natural runoff and storage regulation effects on the main stem of the Ohio River.

A plan of survey for the entire comprehensive study and development of a "Main Control Plan" for flood control and other purposes was submitted to the Chief of Engineers in January 1960.

A draft report on project flood studies was prepared.

Fiscal Year 1961

The 30 January 1961 report of the Senate Select Committee on National Water Resources recommended comprehensive water resources planning for the several river basins of the nation. In his natural resources message to the Congress on 23 February 1961, the President announced support for the goal to "develop comprehensive river basin plans . . . " as urged by the Senate Select Committee.

Draft of report on project flood study was submitted to Chief of Engineers' staff during conference with Ohio River Division.

A conference was held between Ohio River Division and Districts on Ohio River flood control benefit studies.

Ohio Basin studies were initiated by the U.S. Public Health Service and the U.S. Fish and Wildlife Service.

At a meeting in Columbus, Ohio, on 8 February 1961, representatives of the Public Health Service and the Corps of Engineers discussed the Ohio Basin study program with officials of the State of Ohio. This was the first of seven such meetings with states concerned, and the initial joint consideration of the role the states might play.

Flood damage surveys of Ohio River flood plain from the mouth of the Green River to the mouth of the Ohio River were made by Louisville District.

Flood damage surveys of Cincinnati Metropolitan Area and a part of Louisville Metropolitan Area were initiated by Louisville District.

Flood damage surveys of Ohio River valley from Point Pleasant, W. Va., to Marietta, Ohio, were initiated by Huntington District.

Computation of river stage reductions effected upon Ohio River floods of past record by existing reservoirs, those under construction and those under advanced planning were completed.

A draft report on recommended procedure for distribution of Mississippi River flood control benefits to Ohio River Basin reservoirs was submitted to the Chief of Engineers.

A revised schedule of Ohio River investigations was furnished to the Chief of Engineers.

Fiscal Year 1962

The U.S. Geological Survey work on stage-discharge rating curve extensions was completed.

Revised project flood study data was submitted to the Chief of Engineers and revision of draft report thereon was started following a conference between the staffs of the Chief of Engineers and the Ohio River Division.

Reservoir operation studies for low flow regulation were started.

Preliminary review to determine the approximate effect of potential Corps of Engineers reservoir projects classified "inactive" and "deferred for restudy" was initiated.

Procedure for distribution of Mississippi River flood control benefits was approved by the Chief of Engineers.

Studies on time of travel of low flows were initiated.

Flood damage surveys for designated portions of the Ohio River flood plain were initiated by Pittsburgh District and Huntington District.

Several meetings were held between staffs of the Chief of Engineers, Rivers and Harbors Board, Ohio River Division, U.S. Public Health Service, U.S. Fish and Wildlife Service, National Park Service, Economic Research Service, and Pittsburgh District concerning an economic base survey for the Ohio River Basin.

Staffs of the Ohio River Division and the Chief of Engineers interviewed organizations capable of preparing an economic base study, and selected a slate of potential contractors. A contract was awarded 8 March 1962 to Arthur D. Little, Inc., for the first phase of an Ohio River Basin economic base survey.

Conferences were held with the National Park Service concerning its interests in the Ohio River Basin study. Work was started by the National Park Service on outdoor recreation aspects.

Objectives and scope of the Ohio Basin study, with emphasis on coordination of Public Health Service studies with state agencies were discussed in meetings involving representatives of the Corps of Engineers, the Public Health Service and the states of Indiana, Kentucky, West Virginia, Illinois, Pennsylvania and Tennessee.

Senate Document No. 97, "Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources," prepared under the direction of the President's ad hoc Water Resources Council, was published 29 May 1962.

The plan for study of rural water requirements was developed jointly by the Economic Research Service, Forest Service, Soil Conservation Service, Office, Chief of Engineers and Ohio River Division.

The formation of a Coordinating Committee was initiated. Designation of representatives to serve on the Committee was requested of Departments of Agriculture; Commerce; Interior; Health, Education and Welfare; and the Federal Power Commission by letter dated 21 June 1962 from Assistant Secretary of the Army.

Fiscal Year 1963

Studies of rural water needs were started by Economic Research Service and Soil Conservation Service, U.S. Department of Agriculture.

Preliminary discussions were held with Division Hydrologists of the U.S. Geological Survey on proposed ground water studies.

Letters from Division Engineer were sent 16 July 1962 to Governors of 11 states requesting designation of representatives to serve on the Coordinating Committee.

The Ohio River Standard Project Flood Study report was approved by the Chief of Engineers.

A supplemental agreement was made to the contract with Arthur D. Little, Inc., covering the second phase of the Ohio Basin economic base study.

The newly formed Bureau of Outdoor Recreation assumed responsibility for the Outdoor Recreation appendix. A conference between field representatives of Public Health Service, Bureau of Outdoor Recreation, Bureau of Sport Fisheries and Wildlife, Economic Research Service, Soil Conservation Service, and the Corps of Engineers was held to discuss the economic base survey and objectives and scope of the Ohio Basin study.

Work was started on low flow frequency studies, time of travel of low flows and water availability.

Reservoir operation studies to determine effects of all authorized reservoirs on selected actual floods were completed.

Studies of modified flood flow and stage frequencies at Ohio River control stations were completed.

At a meeting in Cincinnati on 12-13 June 1963 attended by Washington level representatives of participating agencies, specific objectives, scope, degree of refinement and budgetary problems in comprehensive basin studies were discussed and clarified.

Fiscal Year 1964

U.S. Geological Survey initiated ground water studies.

A revised coordinated budget reflecting changes due to actual appropriations for Fiscal Year 1964 and the limitation on funds to be budgeted for Fiscal Year 1965 was submitted.

An information pamphlet on the Ohio River Basin Comprehensive Survey, initially distributed to Coordinating Committee members and participating Federal agencies in August 1963, was revised to conform to interdepartmental agreement on scope of framework studies and reissued in May 1964.

The first meeting of the Coordinating Committee was held in Cincinnati, on 20 September 1963. A second meeting was held in Pittsburgh, on 15-16 January 1964.

An interagency field level conference was held in Cincinnati on 15 October 1963 to discuss study progress and inter-agency coordination. Agencies represented were the Corps of Engineers, Bureau of Outdoor

Recreation, Fish and Wildlife Service, Economic Research Service, Soil Conservation Service, U.S. Geological Survey, Public Health Service, Forest Service, Federal Power Commission, and Southeastern Power Administration.

Flood damage surveys of Ohio River flood plain reach from mouth of Miami River to mouth of Kentucky River was initiated by Louisville District.

An outline of proposed state reports on state laws, policies, and programs, developed in collaboration with state officials, was distributed to the states involved with a request for the needed information.

An interagency field level conference was held to discuss methodology for developing the economic base survey. Participating agencies were Corps of Engineers, Economic Research Service, Forest Service, Soil Conservation Service, Public Health Service, Bureau of Mines, Bureau of Outdoor Recreation, and Bureau of Sport Fisheries and Wildlife.

The hydroelectric power study program was discussed in a conference with regional representatives of the Federal Power Commission and Southeastern Power Administration.

Guidelines for Framework Studies, dated 10 February 1964, formulated by the Interdepartmental Staff Committee, ad hoc Water Resources Council, was furnished for application to the Ohio River Basin Comprehensive Survey.

Four resolutions calling for review of recommendations contained in prior reports adopted by the Senate Committee on Public Works following the flood of March 1964 were referred to Ohio River Division by the Chief of Engineers for inclusion in the Ohio River Basin Comprehensive Survey.

The Division Engineer visited state capitals for the purposes of meeting the Governors and state officials and discussing the Ohio Basin study and matters of mutual interest in regard to water and related land resources. States visited were Ohio, Virginia, North Carolina, Kentucky, West Virginia, Maryland and Indiana.

A draft report on the economic base survey of Ohio River Basin was submitted by Arthur D. Little, Inc.

Work was completed on studies of low flow frequencies, time of travel of low flows, water availability, sedimentation, navigation water requirements and the development of a standard project design flood for the Ohio River.

Work was started on drafting of the Hydrology Appendix.

Fiscal Year 1965

The Coordinating Committee's Subcommittee on Water Quality met in September 1964.

The Coordinating Committee held its third meeting on 17-18 September 1964 at Rough River Dam State Park, Kentucky.

A preliminary draft of the Hydrology Appendix was completed.

A general outline for the Main Report was completed.

Flood damage studies on the main stem of the Ohio River were completed except for part of the Louisville Metropolitan Area and the Ohio River reach from the Kentucky River to the Green River.

Work was started on compilation of data on existing and potential reservoir and local protection projects.

The Projective Economic Study by the Arthur D. Little Company was completed and submitted for final review. Procedures for use of the data by other agencies were coordinated.

The Fish and Wildlife Service compiled basic data and information of current conditions by states, and initiated work on projection of future needs.

The U.S. Geological Survey completed reports in draft form on ground water resources for four of 12 subbasins.

The Federal Power Commission, in cooperation with the Southeastern Power Administration, initiated studies on electric power supply and demand in the basin.

An interagency technical work group met to define current and potential study problems, and to discuss the form and nature of the summary and conclusions for the report.

The Coordinating Committee's Subcommittee on Water Quality met on 15 January 1965.

The Appalachian Regional Development Act was passed on 9 March 1965.

The Coordinating Committee held its fourth meeting in Huntington, West Virginia, on 23-24 March 1965.

Inventory of available flood damage data in subbasins was completed.

Drafts of reports on state laws, policies and programs were received from North Carolina, Virginia and New York. Partial reports were received from Maryland, Kentucky, Tennessee, West Virginia and Ohio.

Inventory studies of potential reservoir sites and local protection projects were completed.

The coordinated budget for Fiscal Year 1967 was transmitted to the Interdepartmental Staff Committee, ad hoc Water Resources Council.

The U.S. Geological Survey completed, in draft form, the reports on the ground water distribution and potential in the Ohio River Basin. They include a summary report on the Ohio River Basin and 12 interim reports on subbasins.

The Bureau of Outdoor Recreation completed preliminary estimates of outdoor recreation demand for the Ohio River Basin and its 19 subareas. These estimates were distributed to all interested agencies for comment.

The Division Engineer met with the Governor of Tennessee and state officials on 9 June 1965.

Revised Guidelines for Framework Studies were published 10 June 1965.

Fiscal Year 1966

The Water Resources Planning Act (PL 89-80) was approved by the President on 22 July 1965.

The Coordinating Committee met 16-17 September 1965 in Nashville, Tennessee; 19-20 January 1966 in Cincinnati, Ohio; and on 15-16 June 1966 in Indianapolis, Indiana.

Tabulation of available flood damage data in subbasins was completed in the Louisville District.

Development of a method for estimating flood damages for projected conditions of development in the flood plains was started.

Studies to determine future trends in navigation were initiated.

Drafts of state reports from Virginia and Ohio were distributed to study participants.

New York furnished economic projections for the Allegheny Basin counties in that state. These were disseminated to study participants as a supplement to Appendix B, Projective Economic Study.

A draft of Appendix E, Ground Water, was informally reviewed by the Corps of Engineers and the Public Health Service.

Modifications to preliminary outdoor recreation demand estimates of Appendix H, Outdoor Recreation, were made by the Bureau of Outdoor Recreation.

The U.S. Fish and Wildlife Service completed preliminary tables of future demands for fishing and hunting.

A preliminary draft of Appendix I, Electric Power, in the form of tables and illustrations was completed by the Federal Power Commission.

A working level meeting of participating federal agencies and states was held in November 1965. Each agency discussed potential problems relating to the use and coordination of its data and findings.

The Division Engineer met with the Governor and other state officials in New York on 23 November 1965.

Writing of the Flood Control Appendix was initiated.

Contacts were made with key persons of university study groups, shippers, bargelines and shipyards for their views on future trends in navigation.

Partial reports from Illinois and Pennsylvania on state laws, policies, and programs were received and reviewed.

Review and analysis of information for presentation in Appendix K, Development Program Formulation, and the Main Report was initiated.

The draft of Appendix E, Ground Water was reviewed by Coordinating Committee members.

The first draft of Appendix H, Outdoor Recreation was disseminated for review.

Appendix G, Fish and Wildlife Resources was completed in draft form and reviewed within the author agency.

A draft of Appendix I, Electric Power, was distributed for review.

The Department of Agriculture completed studies on agricultural production data, drainage, and timber resources and submitted its report for informal field review.

The Division Engineer met with Pennsylvania officials in Harrisburg on 11 January 1966.

Analysis of data on needs for navigation, flood control, major drainage, water supply, water quality control, recreation, electric power, watershed protection and management was completed.

Appendix C, Hydrology, was printed.

Studies by U.S. Geological Survey, Fish and Wildlife Service, Bureau of Outdoor Recreation and Federal Power Commission were completed.

Guidelines for Framework Studies were supplemented by the addition of parts V, VI and VII, published 10 June 1966 by the Water Resources Council.

The Federal Water Pollution Control Administration, initially established in the Department of Health, Education and Welfare was transferred

to the Department of the Interior in May 1966. It completed the preparation of Appendix D, Water Supply and Water Pollution Control, which had been started by the Public Health Service.

The Division Engineer met with the Governor and other state officials in Springfield, Illinois on 29 April 1966.

A meeting with state and commonwealth Coordinating Committee members was held on 10 May 1966 in Cincinnati, Ohio, to consider what should be presented in the report with regard to state planning and development programs and costs.

The plan of development for water and related land resources was discussed at an interagency meeting on 19 May 1966.

Fiscal Year 1967

The Coordinating Committee met at Columbus, Ohio, on 14-15 September 1966; Cincinnati, Ohio, on 25-26 January 1967; and Marietta, Ohio, on 6-7 June 1967.

An ad hoc work group of the Coordinating Committee prepared the Ohio Region Chapter for the Water Resources Council's first National Assessment.

Informal field review of Appendix A, History of Study; Appendix D, Water Supply and Water Pollution Control; and Appendix F, Agriculture was completed.

Reports on state laws, policies and programs were received from Illinois, New York, and Pennsylvania.

Appendix G, Fish and Wildlife Resources, was reproduced in final form.

Informal field review of Appendix L, Navigation, and Appendix M, Flood Control was completed.

Appendices C, Hydrology; F, Agriculture; G, Ground Water; H, Outdoor Recreation; and I, Electric Power were reproduced in final form.

The Department of Transportation, created by Public Law 89-670, was activated 1 April 1967. Thereafter, Sylvester E. Ridge, Bureau of Public Roads, represented both Commerce and Transportation on the Coordinating Committee.

Fiscal Year 1968

Appendix D, Water Supply and Water Pollution Control was reproduced in final form.

The Coordinating Committee met at Louisville, Kentucky, on 10-11 October 1967; at Cincinnati, Ohio, on 14-15 February 1968; and at Charleston, West Virginia, on 24-25 June 1968.

The revised and expanded "Guidelines for Framework Studies, October 1967" was published by the Water Resources Council.

Coordinating Committee members or their representatives participated in meetings at Cincinnati on 7-8 November and 12-13 December in connection with the field review and revision of Appendix K, Development Program Formulation. Similar meetings were held on 11-12 March and 1-2 April in connection with the preparation of the Main Report.

Informal field review of Appendix K, Development Program Formulation, was completed.

Final printing of Appendix J, State Laws, Policies and Programs, was completed.

Final printing of Appendix M, Flood Control, was completed.

Fiscal Year 1969

Final printing of Appendix L, Navigation, was completed.

The Main Report was reviewed by the Coordinating Committee and the Planning Committee of the Water Resources Council.

Representatives of the Coordinating Committee met with the Planning Committee of the Water Resources Council in Washington on 9 January 1969 concerning revision of the Main Report.

A work group of the Coordinating Committee met in Cincinnati on 11 February 1969 and a task force was named to revise the Main report. Its work was reviewed by the work group on 22 April 1969.

The fifteenth meeting of the Coordinating Committee was held at Louisville, Kentucky, on 21-22 May 1969. The revised draft of the Main Report was approved subject to further editing of Sections XII - Conclusions; and XIII - Recommendations without substantive change.

Final printing of Appendix K, Development Program Formulation, was completed.

Fiscal Year 1970

The report of the Ohio River Basin Comprehensive Survey was transmitted to the Water Resources Council.

SECTION V - COORDINATING COMMITTEE

Between February 1961 and June 1962, representatives of the Public Health Service and the Corps of Engineers held a series of conferences with state officials to inform them of the objectives and scope of the Ohio River Basin Comprehensive Survey, and to consider how the states and commonwealths of the basin might play an important part. Meetings took place in Ohio, Indiana, Kentucky, West Virginia, Illinois, Pennsylvania, and Tennessee - a substantial portion of each being within the area drained by the Ohio River and its tributaries. At each meeting the possibility of forming an advisory committee to be composed of both state and Federal members, was discussed.

During this same period, there was developing a broader concept of comprehensive long-range river basin planning for all water and related land resources, which was to find expression in the report of the Senate Select Committee on National Water Resources and in Senate Document No. 97, 87th Congress, 2nd Session. Prompt and affirmative response to this concept, both in Washington and elsewhere across the nation, was reflected in the broadening scope of the Ohio River Basin study. Such was the climate when the Division Engineer, Ohio River Division, proposed in a letter to the Chief of Engineers on 6 June 1962, ".....to form an advisory committee of representatives of the Federal agencies involved in the Ohio River Basin investigations and affected states." The Chief of Engineers approved the formation of ".....an Ohio River Basin Survey Coordinating Committee;" and the Assistant Secretary of the Army (FM) advised the Secretaries of Agriculture; Health, Education and Welfare; and Interior, that action had been initiated to establish "coordinating arrangements similar to those used effectively in the Delaware Basin study....."

Excerpts of correspondence concerning the establishment of the Coordinating Committee for the Ohio River Comprehensive Survey and the role conceived for it are as follows:

a. Letter, Division Engineer, Ohio River Division, to Chief of Engineers, subject, "Ohio River Basin Review Survey Advisory Committee," dated 6 June 1962:

> *** "3. It is proposed at this time to form an advisory committee of representatives of the Federal agencies involved in the Ohio River Basin investigations and affected states. The primary functions of this committee would be the periodic review of the progress being made in the investigations, discussion of policy matters and problems of mutual interest, and the furtherance of exchange of assistance and advice between participating Federal and state agencies." By indorsement, the Chief of Engineers approved formation of ".....an Ohio River Basin Survey Coordinating Committee....."

b. Letter dated 15 June 1962, from the Assistant Secretary of the Army (FM) to the Secretaries of Agriculture, HEW, and Interior:

*** "Pending the possible establishment of river basin commissions as contemplated in the proposed legislation before the Congress, I propose that coordinating arrangements similar to those used effectively in the Delaware Basin study be established. Action currently is being taken to do this for the authorized Ohio Basin comprehensive study. Interagency coordinating committees of the Delaware Basin type can proceed usefully under the existing authority and can be readily converted to basin commission or other formalized arrangements if and when authorized. With your concurrence, I shall propose establishment of coordinating committees, to include representatives of State as well as Federal agencies, for all comprehensive studies which the Congress has directed be undertaken by the Corps of Engineers under the Secretary of the Army."

c. Letter dated 21 June 1962 from the Assistant Secretary of the Army (FM) to the Secretaries of Agriculture, Commerce, HEW, and Interior; and the Chairman, Federal Power Commission:

"Dear Mr. Secretary:

"The Corps of Engineers is conducting a comprehensive investigation of water and related land resource development requirements in the Ohio River Basin in response to a resolution of the Public Works Committee of the United States Senate. The study will encompass an analysis of needs, basin-wide and for major subdivisions, for stream flow regulation, water supply, water quality control, flood control and drainage, watershed treatment, navigation, hydroelectric power, recreation, fish and wildlife conservation, and other purposes; a review of the going program of development; and the formulation of a basin-wide framework plan for further development of the water and related land resources of the Ohio River Basin for all purposes, both short-term and long-term. As the basin-wide framework emerges, more detailed planning for subbasins will be required as, for example, in the Wabash River Basin where detailed investigations will be initiated shortly.

"Working arrangements at the field level have been initiated by the Corps of Engineers' Ohio River Division with the counterpart offices of the Public Health Service, the Economic Research Service, the Fish and Wildlife Service, the National Park Service, the Weather Bureau, the Geological Survey, and the Tennessee Valley Authority, and are in various stages of development and activity. Preliminary conferences also have been held between Division representatives and officials of several basin states. Steps are being taken to extend similar arrangements to additional

States and Federal agencies including the regional office of the Federal Power Commission and the Soil Conservation Serivce. Also, the Corps of Engineers has arranged with Arthur D. Little, Inc., and with the Economic Research Service of the Department of Agriculture to provide basic economic information.

"The study now has reached the point where active participation of the several interested Federal departments and agencies and the affected states, following generally the pattern of the recent Delaware Basin Study in accomplishing an integrated and comprehensive plan of development, is considered essential. To this end it is proposed to form a coordinating committee on the Ohio River Basin Survey consisting of one representative each from the Departments of Interior; Agriculture; Commerce; and Health, Education and Welfare, and from the Federal Power Commission; and one representative from each of the eleven states concerned: Ohio, Indiana, Kentucky, West Virginia, Pennsylvania, Illinois, Tennessee, Maryland, Virginia, North Carolina and New York. The Division Engineer, U.S. Army Engineer Division, Ohio River, who has been assigned the responsibility for the investigations in response to the Congressional Authorization, will be the Department of the Army representative and will be chairman of the committee.

"The main functions of the coordinating committee will be to provide a basis for full and continuing exchange of views during the study; to advise and assist all participating agencies in regard to objectives, work assignments, and schedules; to assist in the resolution of study problems as they arise; and to make periodic review of the progress being made. Although the States and several Federal departments may have several participating services, it seems desirable that each State and Federal Department have only one formal representative on the committee in order to maintain a size which will permit it to function effectively as a working committee. This will not preclude participation of additional representatives at committee meetings, as necessary to serve study objectives. And, in addition, normal field-level coordinating arrangements between Federal, State, and other local agencies will be maintained.

"The initial meeting of the Committee will be arranged by the Chairman as soon as practicable after the designation of representatives has been completed. In the first meeting, consideration will be given to functions, responsibility, and schedule and funding of work of each agency involved in the survey, together with details of frequency and place

of meetings and other procedural matters. As the need for detailed subbasin investigations emerges, consideration will be given to the desirability of establishing subbasin coordinating committees and to their relationships with the Ohio Basin Committee.

"I trust that you are in accord with this procedure and that you will designate, as soon as convenient, a representative from your Department to serve on the Ohio River Basin Survey Coordinating Committee.

Sincerely yours,

(signed) W. F. Schaub

W. F. Schaub
Assistant Secretary of the Army
(Financial Management)"

d. Letter, dated 16 July 1962, from Division Engineer, U.S. Army Engineer Division, Ohio River, to the Governors of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia:

"Dear Governor _____:

"The Corps of Engineers is conducting a comprehensive investigation of water and related land resource development requirements in the Ohio River Basin in response to a resolution of the Public Works Committee of the United States Senate. The study will encompass an analysis of needs, basin-wide and for major subdivisions, for stream flow regulation, water supply, water quality control, flood control and drainage, watershed treatment, navigation, hydroelectric power, recreation, fish and wildlife conservation, and other purposes; a review of the current program of development; and the formulation of a basin-wide framework plan for further development of the water and related land resources of the Ohio River Basin for all purposes, both short-term and long-term. As the basin-wide framework emerges, more detailed planning for subbasins will be required as, for example, in the Wabash River Basin where detailed investigations will be initiated shortly.

"Working arrangements at the field level have been initiated with the U.S. Public Health Service, the Fish and Wildlife Service, the National Park Service, the Weather Bureau, the U.S. Geological Survey, and the Tennessee Valley Authority, and are in various stages of development and activity. Steps are being taken to extend

similar arrangements to other Federal agencies including the regional office of the Federal Power Commission and the Soil Conservation Service. Also, the Corps of Engineers has arranged with Arthur D. Little, Inc., and with the Economics Research Service of the Department of Agriculture to provide basic economic information.

"The study now has reached the point where active participation of the several interested Federal departments and agencies and the affected States, following generally the pattern of the recent Delaware Basin study in accomplishing an integrated and comprehensive plan of development, is considered essential. To this end it is proposed to form a coordinating committee on the Ohio Basin survey consisting of one representative each from the U.S. Departments of Interior; Agriculture; Commerce; and Health, Education, and Welfare; and from the Federal Power Commission; and one representative from each of the eleven States concerned: New York, Ohio, Indiana, Kentucky, West Virginia, Pennsylvania, Illinois, Tennessee, Maryland, Virginia and North Carolina. I have been assigned the responsibility for the investigations in response to the Congressional authorization, and will be the Department of the Army representative and chairman of the committee.

"The main functions of the coordinating committee will be to provide a basis for full and continuing exchange of views during the study; to advise and assist all participating agencies in regard to objectives, work assignments, and schedules; to assist in the resolution of study problems as they arise; and to make periodic review of the progress being made. Although the States and several Federal departments may have several participating services, it seems desirable that each State and Federal department have only one formal representative on the committee in order to maintain a size which will permit it to function effectively as a working committee. This will not preclude participation of additional representatives at committee meetings, as necessary to serve study objectives. And, in addition, normal field-level coordinating arrangements between Federal, State, and other local agencies will be maintained.

"I will arrange for the initial meeting of the committee as soon as practicable after the designation of representatives has been completed. In the first meeting, consideration will be given to functions, responsibility, and schedule and funding of work of each agency involved in the survey, together with details of frequency and place of meeting and other procedural matters. As the need for detailed subbasin investigations emerges, consideration will be given to the desirability of establishing subbasin coordinating committees and to their relationships with the Ohio Basin Committee.

"I trust that you are in accord with this procedure and that you will designate, as soon as convenient, a representative to serve on the Ohio Basin Survey Coordinating Committee.

Sincerely yours,

(signed) Jackson Graham

JACKSON GRAHAM
Brigadier General, USA
Division Engineer"

e. Joint letter, dated 27 November 1962 from the secretaries of Agriculture, Army, HEW and Interior to the Director of the Budget.

Dear Mr. Bell:

"In your letter of June 4 to each of us, the Secretaries who would comprise the proposed Water Resources Council, you requested that we take steps to achieve effective coordination of water resources planning programs in Fiscal year 1964 budget estimates. You also requested that we jointly consider means by which adequate coordination of water resource planning activities may be assured.

"Through the Interdepartmental Staff Committee, which we established last year to assist in the joint tasks assigned to us by the President relating to other water resource matters, we have completed coordination of water resource planning programs for reflection in fiscal year 1964 budget estimates, as set forth in the enclosed table. This information is forwarded to you at this time with the expectation that it will be of most value now in preparation of the President's budget for fiscal year 1964.

"Consideration has been initiated concerning means by which adequate coordination of planning may be assured. For the Ohio Basin where planning is underway we have agreed to form a coordinating committee of Federal and State representatives similar to that utilized in the recent Delaware study. Conclusions have not yet been reached as to the appropriate procedures for other river basins. We will inform you of these conclusions as soon as they have been reached.***"

Composition of the Coordinating Committee, and the period of service of each of its several members, is indicated in Table 3.

Principal functions of the Coordinating Committee were:

TABLE 3

COMPOSITION - COORDINATING COMMITTEE - OHIO RIVER BASIN COMPREHENSIVE SURVEY

Agency or State	Member	Period of Service
Department of AGRICULTURE	Charles E. Swain	27 November 1962 - 13 June 1964
	Kenneth E. Grant	14 June 1964 - 3 June 1967
	Thomas B. Evans	4 June 1967 -
Department of the ARMY	Brig Gen Jackson Graham	21 June 1962 - 24 February 1963
	Col Robert W. Lockridge	25 February 1963 - 8 April 1963
	Brig Gen W. P. Leber	9 April 1963 - 28 June 1966
	Col John C. H. Lee, Jr.	29 June 1966 - 30 September 1966
	Brig Gen Willard Roper	1 October 1966 - 20 October 1967
	Col John A. Graf	21 October 1967 - 3 September 1968
	Col John C. H. Lee, Jr.	4 September 1968 - 17 November 1968
	Maj Gen Willard Roper	18 November 1968 -
Department of COMMERCE & TRANSPORTATION	S. E. Ridge	23 July 1962 -
Department of HEALTH, EDUCATION & WELFARE	Lloyd Gebhard	24 July 1962 - 17 July 1966
	John D. Faulkner	18 July 1966 -
Department of the INTERIOR	Fred Wampler	August 1963
FEDERAL POWER COMMISSION	Stewart P. Crum	23 July 1962 - 6 April 1965
	John H. Spellman	7 April 1965 -
ILLINOIS	Victor de Grazia	22 August 1962 - July 1963
	Gene Graves	August 1963 - January 1969
	Ray C. Dickerson	2 June 1969 -

Agency or State	Member	Period of Service
INDIANA	Clinton Green	2 August 1962 - 17 February 1964
	John E. Mitchell	18 February 1964 - 11 July 1966
	William J. Andrews	12 July 1966 - 20 November 1966
	John E. Mitchell	21 November 1966 - 10 February 1969
	Perley H. Provost, Jr.	11 February 1969 -
KENTUCKY	J. O. Matlick	10 September 1962 - 7 January 1968
	Jewell Graham	8 January 1968 -
MARYLAND	James J. O'Donnell	3 August 1962 - 27 October 1968
	Albert R. Miller, Jr.	28 October 1968 -
NEW YORK	Harold G. Wilm	27 July 1962 - 31 January 1966
	F. W. Montanari	1 February 1966 -
NORTH CAROLINA	Harry Brown	27 July 1962 - 31 December 1963
	Walter E. Fuller	1 January 1964 - 16 December 1965
	George E. Pickett	17 December 1965 -
OHIO	Herbert B. Eagon	18 July 1962 - 16 April 1963
	Fred E. Morr	17 April 1963 -
PENNSYLVANIA	Maurice K. Goddard	2 January 1963 -
TENNESSEE	Harold V. Miller	23 July 1962 -
VIRGINIA	Marvin M. Sutherland	30 July 1962 -
WEST VIRGINIA	Bern Wright	31 October 1962 - 26 June 1966
	Edgar N. Henry	27 June 1966 -

a. To provide a basis for full and continuing exchange of views during the study;

b. To advise and assist all participating agencies in regard to objectives, work assignments, and schedules;

c. To assist in resolution of study problems as they arise;

d. To make periodic review of progress.

The broadened philosophy and expanded viewpoint represented by Senate Document No. 97, the myriad purposes for which water and related land resources of the basin need to be managed; the host of federal, regional, state, local and private interests concerned; and the tasks implied by the functions outlined above urgently suggested the need for the members of the Committee to fully understand the planning environment. The existing degree of development and use of water and related land resources, as well as the pertinent Federal, state and local laws, policies and programs all had to be considered. Accordingly, early meetings were planned so as to provide for (1) a review of Federal and non-Federal programs in that portion of the basin in which the meeting was being held; (2) discussion of Committee business to include reports of study progress; and (3) the introduction of new information relating to the study. To assist each member in adequately informing interested agencies and individuals of his department, state or commonwealth regarding the study, the minutes of each meeting were published and distributed to members in the quantity requested.

In a further effort to furnish a basis for public understanding, representatives of public news media were invited to cover Committee sessions. The Ohio River Valley Water Sanitation Commission, Tennessee Valley Authority, League of Women Voters, Ohio Valley Improvement Association, the Upper Ohio Valley Association, and other interested agencies and organizations were represented at some or all of the meetings. A brief period was set aside near the end of each meeting for observer questions or comments.

The Coordinating Committee operated as a sort of board of review to insure balanced overall consideration of all purposes, all interests, and all geographic areas. It also attempted to insure that all water and related land management problems and potential solutions were considered.

TABLE 4

COORDINATING COMMITTEE - MEETING PARTICIPATION

	First Meeting 20 Sep 1963	Second Meeting 15-16 Jun 1964	Third Meeting 17-18 Sep 1964	Fourth Meeting 23-24 Mar 1965	Fifth Meeting 16-17 Sep 1965	Sixth Meeting 19-20 Jan 1966	Seventh Meeting 15-16 Jun 1966	Eighth Meeting 14-15 Sep 1966	Ninth Meeting 25-26 Jan 1967	Tenth Meeting 6-7 Jun 1967	Eleventh Meeting 10-11 Oct 1967	Twelfth Meeting 14-15 Feb 1968	Thirteenth Meeting 24-25 Jun 1968	Fourteenth Meeting 4-5 Dec 1968	Fifteenth Meeting 21-22 May 1969
Agriculture	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Army	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Commerce	X	X	X	X	X	X	X	X	X	X		X	X	X	X
HEW	X	X	X	X	X	X		X	X	X	X	X		X	X
Interior	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FPC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Illinois	X	X	X				X	X	X	X	X		X	X	X
Indiana	X	X	X	X		X	X	X	X	X	X	X	X	X	X
Kentucky	X	X	X		X		X	X	X	X	X	X		X	X
Maryland	X	X	X				X	X			X			X	
New York	X	X	X	X	X	X	X	X	X	X		X		X	X
North Carolina	X	X	X	X	X										
Ohio	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pennsylvania	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tennessee	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Virginia	X	X	X	X	X	X	X	X	X	X	X	X			
West Virginia	X	X		X		X		X	X	X	X	X	X	X	X

SUMMARY - FIRST MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee for the Ohio River Basin Comprehensive Survey held its initial meeting in Cincinnati, Ohio, on 20 September 1963. The meeting was called to order by the Chairman, Brigadier General W. P. Leber, at 8:30 a.m. The following members or designated alternates were present:

Agriculture	C. E. Swain
Army	Brig Gen W. P. Leber, Chairman
Commerce	Roy E. Lundquist - Alternate
HEW	Richard A. Vanderhoof - Alternate
Interior	Fred Wampler
FPC	Stewart P. Crum
Illinois	Frank Kirk - Alternate
Indiana	Clinton Green
Kentucky	Stephen A. Wakefield - Alternate
Maryland	James J. O'Donnell
New York	F. W. Montanari - Alternate
North Carolina	Harry Brown
Ohio	Robert W. Teater - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Marvin M. Sutherland
West Virginia	Bern Wright

Attention was called to the authority for the Ohio River Basin Comprehensive Survey contained in a resolution of the Senate Committee on Public Works adopted in May 1955. The resolution requested a review of the reports published in House Document 306 of the 74th Congress, to determine whether any modifications of the existing plan for flood control and other purposes is advisable at this time. Reference was made to recent changes in Federal law and policy including Senate Document No. 97, 87th Congress, 2nd Session.

STATUS OF THE SURVEY

Amos Finkbine, Chief, Basin Planning Branch, reported on progress to date by the Corps of Engineers and other participating Federal agencies, and outlined study objectives. R. S. Lanier, Economist, Basin Planning Branch presented information concerning the economic base survey being conducted under contract by Arthur D. Little, Inc.

REPORTS OF FEDERAL AGENCIES

Representatives of the Departments of Agriculture; Commerce; Health, Education and Welfare; and Interior, as well as the Federal Power Commission, outlined the functions of their respective agencies participating in the Ohio River Basin Comprehensive Survey, and the statutory authority therefor.

MISSION AND PROCEDURES OF THE COORDINATING COMMITTEE

General Leber, Division Engineer and Coordinating Committee Chairman discussed the origin, purpose and specific functions of the Coordinating Committee; the role of the states; and procedures to be followed. He proposed to use the "Quaker Method" of obtaining the "sense of the meeting," since there is no authority for resolving issues by majority vote.

Herbert Eagon, Water Resources Coordinator, Basin Planning Branch, discussed the role of the states in comprehensive basin planning as outlined in Senate Document 97 and the Flood Control Act of 1944; and indicated that information on state laws, policies and programs would be needed for the study.

REPORTS OF STATES AND COMMONWEALTHS

Illinois - Frank Kirk said he was impressed with the scope of the effort being undertaken and with the attempt to coordinate between Federal agencies and the states. Some 15 state and local agencies in Illinois are concerned with water problems. These include conservancy districts and a port district. They will be kept informed on the progress of the Ohio River Basin Comprehensive Survey.

Indiana - Clinton Green said Governor Welsh and all state departments will cooperate with the Corps of Engineers and other Federal agencies. State agencies and officials will be kept informed of study progress. John Mitchell has recently been appointed by the Governor as Executive Secretary of the Indiana Flood Control and Water Resources Commission. Indiana now has available about $6 million per year from a cigarette tax established in 1963 which may be used for water projects. Indiana's share of the cost of Monroe Reservoir, however, is to come from the general fund. The cigarette tax proceeds will be available for such projects in the future.

Kentucky - Stephen A. Wakefield, alternate for J. O. Matlick said he come here to learn details of what this study involves. Kentucky is in a position to cooperate and Mr. Matlick and the Governor will want this to be done.

Maryland - James J. O'Donnell. A very small part of Maryland is in the Ohio River Basin. This is the headwaters of the Youghiogheny River in Garrett County. Maryland will cooperate.

New York - F. W. Montanari, alternate for Harold G. Wilm. New York has reorganized to bring all aspects of water policy under the Water Resources Commission, the Chairman of which is Dr. Wilm, Commissioner of Conservation. Plans and policies approved by the Commission are then implemented by other agencies. The Water Resources Commission provides a focal point for cooperation. The mechanism is new and in the developmental stage.

North Carolina - Harry Brown. Headwaters of the New River include 770 square miles in North Carolina. The remainder of the State is outside the Ohio River Basin.

Ohio - Robert W. Teater, alternate for Fred Morr. The Ohio Department of Natural Resources is a composite department including most of the State agencies concerned with this study. It works closely with the Departments of Development and Health, the directors of these three being ex officio members of the Ohio Water Commission which is in the Department of Natural Resources. Director Morr and the Department of Natural Resources will be the prime contact for Ohio, and will undertake necessary coordination. The State has made significant progress with a program of basin inventory studies since 1955.

Pennsylvania - Alan J. Sommerville, alternate for Maurice K. Goddard. This is the fifth coordinating committee in which the Commonwealth of Pennsylvania is a participant. The Commonwealth is or has been involved in comprehensive basin studies for the Delaware, Potomac, Susquehanna and the Genesee Rivers. The comprehensive plan is a framework to build upon, subject to modification as conditions change. The end result should be something similar to the Delaware River Basin Compact.

In other basin studies, two types of groups have been active. The first is a citizens committee, which has handled educational work to produce public understanding. The second, an advisory committee, generally consisting of representatives of the various states, has been concerned with the type of governmental entity needed to administer the water resources of the basin.

Pennsylvania has the same splintering of agencies as is found in the Federal departments. The Department of Forests and Waters will be the coordinating agency. It will disseminate information to others and consolidate their comments.

Tennessee - Harold V. Miller said he was impressed and heartened by the spirit of genuine cooperation evident in this meeting. This atmosphere will permit the states' voices to be heard, and stimulate the states in formulating positions and programs. Tennessee has some 22 agencies concerned with water resources. Governor Clement intends to name a water resources coordinator in his own office - directly responsible to the Governor. The job to be done is not all Federal and it isn't all non-Federal. A common ground is needed; some reasonable operating basis.

Virginia - Marvin M. Sutherland. Two percent of the study area is in Virginia. Eight percent of the Commonwealth drains into the Ohio River - the headwaters of the New River. A very great potential exists there for economic development.

ORSANCO, as an interstate compact agency, should be represented on this Coordinating Committee more directly than through the member states. "It ill behooves any of the representatives of participating states to talk about water quality in the absence of a representative of ORSANCO."

Virginia is unique in that it has a constitutional prohibition against any State appropriation for participation in a joint Federal-State project. Local governments, however, may participate.

Six or eight State agencies have important interest in this study. Mr. Sutherland will channel information and requests to them.

West Virginia - Bern Wright. This study is important to West Virginia, 85 percent of which is within the Ohio River Basin. The State in its entirety has been declared a distressed area. Water and highways are the two things that must be developed before it can pull out of this so-called depression. Cooperation with the Corps of Engineers and other Federal agencies is assured.

Concluding Discussions - Throughout the meeting, references were made to the need for public information and public understanding. The Chairman stated that the Corps of Engineers has a limited potential for the dissemination of information. The primary methods in use are publications such as the pamphlet, "Plan for Comprehensive Survey, Ohio River Basin Water Resources;" talks before interested groups; and public hearings. States may have greater potential. Mr. Swain suggested that Soil Conservation Service employees, foresters, and personnel of fish and wildlife agencies could play an important part in getting information to the local level.

The Chairman established a Subcommittee on Water Quality Standards to be made up of one representative from each of the following: Public Health Service, Department of the Interior, Corps of Engineers, Indiana, Kentucky, Ohio, Pennsylvania, Tennessee, West Virginia, (ORSANCO was later invited to have a representative at meetings of this committee). Mr. Vanderhoof will represent the Public Health Service and act as Chairman.

SUMMARY - SECOND MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee held its second meeting at the Penn-Sheraton Hotel, Pittsburgh, Pa., on 15-16 January 1964. Brigadier General W. P. Leber, Chairman, presided. Regular members and alternates in attendance were as follows:

Agriculture	W. T. Moon - Alternate
Army	Brigadier Gen W. P. Leber, Chairman
Commerce	S. E. Ridge
HEW	Richard A. Vanderhoof - Alternate
Interior	Fred Wampler
FPC	Stewart P. Crum
Illinois	Frank Kirk - Alternate
Indiana	Joseph I. Perrey - Alternate
Kentucky	George Land, Jr. - Alternate
Maryland	James J. O'Donnell
New York	F. W. Montanari - Alternate
North Carolina	George E. Pickett - Alternate

Ohio	C. V. Youngquist - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	J. M. Alexander - Alternate
West Virginia	Kenneth B. Old, Jr. - Alternate

For the benefit of observers and guests, the Chairman reviewed the development of basin planning concepts and referred to Federal laws and policy documents which afford guidance for the Ohio River Basin Comprehensive Survey. The scope of a "framework" study was explained.

FEDERAL PROGRAMS - PITTSBURGH DISTRICT

The history and current status of the Corps of Engineers' civil works program in the Pittsburgh District were reviewed.

The status of programs involving agencies of the Department of Agriculture in the area embraced by the Pittsburgh District was summarized. These include 16 watershed projects under the provisions of PL 566; a million acres of Federal land in the Monongahela and Allegheny National Forests; 53 soil conservation districts; and a Resource Conservation and Development Project which has recently been established for Crawford, Mercer and Venango counties in northwestern Pennsylvania.

NON-FEDERAL WATER AND RELATED LAND RESOURCE PROGRAMS - PITTSBURGH DISTRICT

There are 13 state parks in the Ohio River Basin portion of Pennsylvania. Other active programs include flood control, stream clearance, control over dams and encroachments, the State water program, and Project 70 - all administered by the Department of Forests and Waters.

The West Virginia program in the Monongahela Basin is primarily one of pollution control, acid mine water being the major problem. Three upper watershed projects have been completed. Construction of municipal sewage treatment projects has increased under the Accelerated Public Works program.

In Ohio's Basin Inventory Program, experience of the past two years has emphasized problems of water supply and water quality. About 18 percent of the State of Ohio lies within the Pittsburgh District and has some six million citizens.

New York's small portion of the Allegheny Basin is an important area in which water is regarded as the key to development. Small watershed projects are under development on Ischua Creek, Conewango Creek, and in the Chadakoin River watershed.

The area of Maryland in the Ohio River Basin is only about 200 square miles - less than half of Garrett County. Deep Creek Lake State Park is located on the Pennsylvania Electric Company's lake by the same name. Potentials exist for further recreational development in this area.

BUSINESS SESSION

Corps of Engineers representatives reported the receipt of new Guidelines for Framework Studies which will necessitate revision of the Information Pamphlet, "Plan for Comprehensive Survey, Ohio River Basin Water Resources." Reduced appropriations for Fiscal Year 1964 will result in deferment in flood damage surveys, but will not change allocation of funds for transfer to other Federal agencies. Studies for the development of Standard Project Flood and Project Design Flood for the Ohio River are complete. A Public Information Plan has been distributed; as well as an outline indicating the information desired on state laws, policies and programs.

A proposed outline of the contents of Appendix D - Water Supply and Water Pollution Control has been prepared. Work is continuing on various phases of the project including: (1) population and industry growth and development patterns; (2) data on municipal and industrial water use and waste discharge; (3) investigation of water quality objectives and waste assimilative characteristics; and (4) compilation of data related to water resources and economic development.

As a result of the cooperative mapping program carried on between the Geological Survey and the states and commonwealths, topographic maps are available for the entire Ohio River Basin. The majority of these meet current national standards in scale, content and accuracy. By special request a report on the ground water studies being carried on for the Ohio River Basin was presented by Morris Deutsch, U.S. Geological Survey.

Professor Maurice A. Shapiro, University of Pittsburgh, and Dr. Allen V. Kneese, Resources for the Future, made special presentations relating to the role of education and research in basin planning.

The Chairman announced that the main topic for consideration at the next meeting will be the Projective Economic Study. Tentative plans are to hold the meeting at Rough River Dam State Park in Kentucky.

SUMMARY - THIRD MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee held its third meeting at Rough River Dam State Park, Kentucky, on 17-18 September 1964. Brigadier General W. P. Leber, Chairman, presided. Regular members and alternates in attendance were as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen W. P. Leber, Chairman
Commerce	Robert E. Graham, Jr. - Alternate
HEW	Lloyd W. Gebhard
Interior	Fred Wampler
FPC	John H. Spellman - Alternate
Illinois	David W. Walker - Alternate

Indiana	John E. Mitchell
Kentucky	J. O. Matlick
Maryland	James J. O'Donnell
New York	F. W. Montanari - Alternate
North Carolina	T. G. Harton - Alternate
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	M. M. Sutherland
West Virginia	Not Represented

The Chairman referred to recent changes in state laws. In Kentucky, the Department of Conservation has been redesignated the Department of Natural Resources. Maryland adopted new legislation involving the Board of Natural Resources and the Department of Water of the Maryland Geological Survey. Such changes have a bearing upon the coordination required; and points up the importance of information about state laws, policies and programs requested for use in connection with the Ohio River Basin Comprehensive Survey.

ECONOMIC BASE SURVEY

The Projective Economic Study is the major topic for this meeting. Its purpose is to provide the basis for estimating the needs for, and the value of the services that can be provided by means of water and related land resources development. Peter Stern, Arthur D. Little, Inc., Director for the Ohio Basin study, discussed assumptions made for, methods employed in and results of that study. Dr. George Gols, Senior Economist, Arthur D. Little, Inc., discussed methodology employed in the study; and said the results are only broad indications of the direction in which the economy of the area is moving. These are guidelines - not predictions.

Discussion of the use of the Projective Economic Study was initiated by Ray Lanier, Economist, Basin Planning Branch. Henry L. DeGraff, Chief, Economic Section, Water Supply and Pollution Control, Public Health Service, Region III, said that the Projective Economic Study will serve as a basic building block of information to be used by his agency. Melvin L. Cotner, Economic Research Service, Department of Agriculture, pointed out the importance of economic projections to Agriculture's participation in both framework and detailed basin studies.

James J. O'Donnell, Maryland, discussed the potential usefulness of the Projective Economic Study to states and other non-Federal interests.

CORPS OF ENGINEERS PROGRAM - LOUISVILLE DISTRICT

Colonel Willard Roper reviewed the history and current status of the Corps of Engineers civil works program in the Louisville District. A District map was furnished to each member.

NON-FEDERAL WATER AND RELATED LAND RESOURCE DEVELOPMENTS - LOUISVILLE DISTRICT

John E. Mitchell presented information concerning non-Federal programs and projects within the State of Indiana. He indicated that State maps are available showing locations of (1) stream gages, (2) public water supply systems, (3) small rural water supplies, (4) municipal sewage treatment plants, (5) water quality moniters, and (6) Indiana Department of Conservation properties.

J. O. Matlick highlighted non-Federal water projects and programs in Kentucky, including the "small lakes" program wherein impoundments are created by using highway fill for dams. He also discussed the broadened responsibilities of the Department of Natural Resources and its new Division of Flood Control and Water Resources Development.

David W. Walker reported upon current water planning activities in Illinois and quoted Governor Kerner's recent statement of intent to " . . . invite representatives of Federal agencies and other groups to form an Interagency Advisory Committee for Illinois water planning."

C. T. Foust, Ohio, reviewed the origin of the conservancy district concept and its implications in the Miami River Basin. He described other non-Federal developments in that portion of Ohio which is within the Louisville District.

BUSINESS SESSION

A report on the flood of March 1964 was presented by Edward A. Lawler, Chief, Hydrology and Reservoir Regulation Section, U.S. Army Engineer Division, Ohio River.

Amos Finkbine, Chief, Basin Planning Branch, reported that Guidelines for Framework Studies, prepared by the Interdepartmental Staff Committee, have been issued to the field offices of the Departments of Agriculture; Army; Interior; and Health, Education and Welfare. These are now being used as guidance for the comprehensive surveys of the Ohio River Basin, the Upper Mississippi River Basin, and the Missouri River Basin. The information pamphlet on the Ohio River Study has been revised to conform.

General Leber has visited Ohio, Virginia, North Carolina, Kentucky, West Virginia, Maryland, and Indiana, for informal discussions with state officials on problems of mutual interest.

Agreement has been reached with the Federal Power Commission and other agencies concerned with power development, on a work plan for their participation in the Ohio River Basin Study.

All Corps hydrologic studies have been completed.

Appendix B, Projective Economic Study will be available for purchase from the Superintendent of Documents.

A meeting of the Subcommittee on Water Quality was reported upon by Chairman Richard A. Vanderhoof. The Subcommittee was first briefed as to the objectives of a Type I study, on national water quality objectives and guides, and the 15 years of experience of ORSANCO. Using this background information the Subcommittee will be able to define its functions and revise a preliminary statement prior to the next meeting.

The Department of Agriculture is on schedule in developing information on water and related land resource needs, present and future, in the Ohio River Basin. Among the items being considered are: forest management and its economic implications, treatment needs on non-forested lands and small watershed development. Agriculture representatives feel strongly about the vital role of upstream watershed development in comprehensive basin development. The Department will cooperate with all participants in making this coordinated comprehensive investigation fully responsive to all identifiable needs.

Department of the Interior agencies have studied the Arthur D. Little report, accepted it, and have furnished their comments to the Corps of Engineers. The Land and Water Conservation Fund bill has been signed by the President. Meetings with states will be held soon to discuss its implications. The Bureau of Mines proposed comprehensive studies of mineral resources in connection with the Ohio River Basin Comprehensive Survey. The Corps apparently feels that information otherwise available will be sufficient. The Bureau of Mines is participating, with transfer funds, in the Kanawha and Wabash River Basin Type II studies. The study proposed for the Ohio Basin Survey was considered to be more detailed than could be justified for a framework study. The possibility remains, however, that the Bureau of Mines will be called upon for some information. General Leber said that the scope and detail proposed by the Bureau exceeds the requirements of scope and degree of refinement for framework type studies as outlined by the Interdepartmental Staff Committee, ad hoc Water Resources Council.

SUMMARY - FOURTH MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee held its fourth meeting at Huntington, W. Va., on 23-24 March 1965; Brigadier General W. P. Leber, Chairman, presiding. Regular members and alternates in attendance were as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen W. P. Leber, Chairman
Commerce	Sylvester E. Ridge
HEW	Richard A. Vanderhoof - Alternate
Interior	Fred Wampler
FPC	Stewart P. Crum
Illinois	Not Represented
Indiana	Joseph I. Perrey - Alternate
Kentucky	Not Represented
Maryland	Not Represented
New York	F. W. Montanari - Alternate

North Carolina	T. G. Harton - Alternate
Ohio	Robert W. Teater - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	J. M. Alexander - Alternate
West Virginia	Bern Wright

The Chairman expressed appreciation for the very fine response from states and commonwealths in providing pertinent information on their laws, policies and programs and significant water management problems as seen from the viewpoint of state and local interests.

CORPS OF ENGINEERS PROGRAM - HUNTINGTON DISTRICT

The history and current status of the Corps of Engineers civil works program in the Huntington District was reviewed and a map of the District was furnished to each member of the Committee.

The current status of the Kanawha River Basin Comprehensive Survey (Type II) was discussed.

NON-FEDERAL WATER AND RELATED LAND RESOURCE DEVELOPMENTS - HUNTINGTON DISTRICT

Kenneth Old, Jr., Division of Water, West Virginia Department of Natural Resources, presented maps and data relating to non-Federal developments in the Guyandotte, Middle Island Creek, Little Kanawha, and the West Virginia portions of the Kanawha and Big Sandy Basins. He discussed the Middle Island Creek Development Authority, which was created by special act of the Legislature and is unique in West Virginia. Its purposes include stream regulation, water conservation, control of flooding and erosion, and recreation.

Robert W. Teater, Ohio Department of Natural Resources, presented a summary of past development and present water use in the portion of Ohio which is within the Huntington District; as well as a detailed projection of capital improvements planned by the State. Maps were provided showing non-Federal developments.

J. M. Alexander, Division of Water Resources, Virginia Department of Conservation and Economic Development, expressed the opinion that the hydropower development proposed by Appalachian Power Company for the Blue Ridge Site in Grayson County will add significantly to the capacity of the New River Basin to continue its economic growth and expansion.

Thomas G. Harton, North Carolina Department of Water Resources, said the three counties in the study area (headwaters of the Kanawha River Basin) are eligible for consideration under the Area Redevelopment Act, the Ohio River Basin Survey, and the Appalachia Program. Needs in these counties include additional public water supply to support small industrial development, and improvements in waste treatment. There is unusual

potential for recreational development. The people of Alleghany County believe the proposed Appalachian Power Company development in Virginia will be a good thing.

APPALACHIA

The Appalachian Regional Development Act of 1965 has been signed into law by the President. John L. Sweeney has been appointed Federal Co-Chairman of the Appalachian Regional Commission. The purpose of the Act is to assist economic development.

Professor Pearl F. Ayer, Executive Secretary of the Council of the Southern Mountains, Inc., warmly commended the scientific and technical capabilities and the past accomplishments of the agencies represented in the Ohio River Basin Comprehensive Survey. His talk demonstrated his deep understanding and genuine concern for Appalachia's people and impressed upon his listeners the need for sympathetic understanding and better communication.

Donald A. Crane, Appalachian Regional Commission, reviewed the background and current status of the program. It is the objective of the Act, "To provide public works and economic development programs and the planning and coordination needed to assist in development of the Appalachian region." The Act reflects a different decision-making process for projects to be undertaken and emphasis to be given. It also allows for change in the criteria for evaluating projects; as well as for decision-making at the state and local levels.

General Leber observed that the Appalachian Program envisages more initiative on the part of non-Federal interests in generating programs.

Colonel John C. H. Lee, Jr., Chief, Appalachia Planning Group, Office, Chief of Engineers, discussed the water resources survey authorized and directed in Section 206 of the Appalachian Regional Development Act, certain assumptions, and some preliminary steps that have been taken to prepare for carrying out these functions.

In carrying out this program, it is the intent to fully utilize the existing Corps of Engineers organization down through the Districts. The Office of Appalachian Studies is in addition to, and not in lieu of that organization.

NATIONAL POWER SURVEY OF 1964 - FINDINGS AND OUTLOOK

The Federal Power Commission's National Power Survey, in preparation since 1962, was released in December 1964. Its objectives are abundant supplies of power, greatest possible economy and proper utilization and conservation of natural resources.

STORET - THE STORAGE AND RETRIEVAL OF DATA FOR WATER QUALITY CONTROL

Edgar Pash, Public Health Service, described the river mile index system adopted by the Public Health Service for use in the storage and retrieval of data in the Ohio River Basin. The system begins with zero mileage at the mouth and proceeds upstream, with "right" and "left" banks designated from that viewpoint. This is the reverse of the system generally used by others.

WATER QUALITY STANDARDS SUBCOMMITTEE

At the second meeting of the Subcommittee on Water Quality, presentations were made by Ray Lanier and Carl Gaum of the Basin Planning Branch, Corps of Engineers; and by Dr. Cleary of ORSANCO. It was suggested that the function of the Committee is to recommend criteria relating to water uses and quality, and to municipal and industrial water supply needs. Criteria should be developed by PHS in cooperation with the states and ORSANCO, and considered by the Subcommittee at subsequent meetings as a part of the basis for determining water requirements.

BUSINESS SESSION

The nature, content, and purposes of the Hydrology Appendix recently distributed in preliminary draft form was summarized.

Glenn H. Von Gunten, Chief, Basin Planning Branch, reviewed Guidelines for Framework Studies; reported upon an Interagency Work Group Meeting held 18-19 November 1964; and discussed the general nature and concept of the final report of the Ohio River Basin Comprehensive Survey.

In discussion, Mr. Montanari referred to the draft report "Work Tables of Forest Resource Statistics for the Ohio River Basin," and pointed out that it does not include the three New York counties in the upper Allegheny Basin. Mr. Grant conceded that this is true and agreed to look into the matter. Mr. Montanari suggested the possibility of adding one more economic subarea - No. 20 (New York was subsequently advised that amendments are being made to Work Tables on Forest Statistics for the Ohio River Basin; and that other action to insure full coverage of New York counties has been taken).

Mr. Ridge inquired as to whether or not arrangements had been made to obtain necessary data relating to transportation and associated facilities, in connection with navigation aspects of the study. He said the Office of Under Secretary for Transportation, Department of Commerce, would appreciate the opportunity for early review of data assembled in this connection. He was advised that an evaluation of navigation only from the viewpoints of (1) water needs and (2) the amount of commodities susceptible of water transportation in the future is contemplated.

The cost sharing implications for Appalachia, of HR 5269 and the Land and Water Conservation Fund Act (PL 88-578) were discussed.

OBSERVER COMMENTS

Mrs. Donald Dornback, League of Women Voters, called attention to the Ohio River Basin Study report completed by the Inter-League Survey Committee made up of representatives from New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana. The booklet is extremely well done.

SUMMARY - FIFTH MEETING OF THE COORDINATING COMMITTEE

The fifth meeting of the Coordinating Committee was held 16-17 September 1965 at the Albert Pick Motel, Nashville, Tennessee; Brigadier General W. P. Leber, Chairman, presiding. Attendance of regular members and alternates were as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen W. P. Leber, Chairman
Commerce	Sylvester E. Ridge
HEW	Lloyd W. Gebhard
Interior	Fred Wampler
FPC	L. B. Woll - Alternate
Illinois	Not Represented
Indiana	Not Represented
Kentucky	Stephen A. Wakefield - Alternate
Maryland	Not Represented
New York	F. W. Montanari - Alternate
North Carolina	T. G. Harton - Alternate
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Dale F. Jones - Alternate
West Virginia	Not Represented

Mr. Spellman has replaced Mr. Crum as the Federal Power Commission representative on the Coordinating Committee.

Indiana's new Department of Natural Resources replaced the former Department of Conservation effective 1 July 1965. The Director is John E. Mitchell.

In West Virginia, Mr. Robert McDonough has replaced Warden Lane as Director of the Department of Natural Resources.

J. O. Matlick, Commissioner, Kentucky Department of Natural Resources, has been named Vice-Chairman of ORSANCO, effective 1 July 1965.

The Chairman reviewed the authority for, and the role of, the Coordinating Committee, and commented upon the way it has operated. With this meeting, the objective of presenting background information

on Federal and non-Federal developments in each part of the basin will be completed. Henceforth, more time and attention will be directed to the serious business of the committee - that of coordinating - as the various parts of the study approach completion.

In addition to providing much useful knowledge of the basin, these meetings have afforded an opportunity to know members as people rather than merely as representatives of this or that Federal agency, state or commonwealth. The Committee has established a pattern of orderliness, objectivity and courtesy which should be a source of satisfaction to all. The Chairman expressed his thanks to each one for help in establishing such a standard.

CORPS OF ENGINEERS PROGRAM - NASHVILLE DISTRICT

The history and current status of the Corps of Engineers civil works program in the Nashville District was reviewed and a District map was furnished to each member of the Committee.

SMALL WATERSHED PROGRAM - NASHVILLE AREA

Mr. Grant invited attention to the interrelationship between upstream projects and main stem developments, and said the small watershed projects can make a significant contribution to meeting water and related land resource needs. J. R. Sasser, State Conservationist for Tennessee discussed the Small Watershed Program, using the Jennings Creek upstream watershed project as a typical example. He made excellent use of color slides, and was congratulated by the Chairman for an excellent and exceptionally well illustrated presentation. In response to a question, Mr. Sasser pointed out that local interests must provide necessary lands, administer contracts, and operate and maintain projects developed under Public Law 566. They are not required to pay any portion of the project costs charged to flood protection; but must share project costs allocated to recreation or other purposes.

In Tennessee, local organizations have submitted applications for assistance in 75 watersheds. There are 71 organized watershed districts in the State. More than 25 projects have been approved for operations.

NON-FEDERAL WATER AND RELATED LAND RESOURCES DEVELOPMENT PROGRAMS - NASHVILLE DISTRICT

Harold V. Miller, Tennessee State Planning Commission, welcomed the group to Tennessee and reviewed non-Federal programs in water and related land resources in that portion of the Cumberland River Basin within his State.

Stephen A. Wakefield, Chief, Division of Flood Control and Water Resources Development, reviewed non-Federal programs in water and related land resources in that portion of Kentucky drained by the Cumberland

River. He called attention to the policy of converting highway fills into dams where appropriate. The Kentucky legislature recently authorized that a bond issue of $176 million for highways, parks, and water resources development be submitted to the voters at the 1965 fall election. (This bond issue was subsequently passed.) General Leber commented upon the fine job Kentucky has done in developing parks and lodges at reservoirs constructed by the Corps of Engineers.

Thomas G. Harton, North Carolina Department of Water Resources, discussed non-Federal water and related land resource developments in that portion of the State which is within the Nashville District.

Dale F. Jones, Division of Water Resources, Virginia Department of Conservation and Economic Development, pointed out that no part of Virginia drains into the Cumberland River. Eight percent of the Commonwealth is in the upper portion of the Tennessee River Basin. Precipitation there varies from 40 to 50 inches annually, exceeding that of any other part of Virginia.

TVA - PAST, PRESENT AND FUTURE

A. J. Wagner, Chairman of the Board of Directors, Tennessee Valley Authority, described the history of that agency and the basic concepts under which it operates. TVA's unique statutory authority encompasses the development of all the resources of the watershed for general economic improvement. It works with local communities and state agencies to analyze local flood situations and guide community growth into safe areas. TVA's tributary area development program involves working with citizen organizations established along watershed lines. Mr. Wagner's presentation included an illustrated discussion of current and future river development projects. He expressed pleasure and satisfaction with the working arrangements existing between TVA and the Corps of Engineers.

(Colonel C. A. Hays, Deputy Division Engineer, presided on the morning of September 17 in the absence of General Leber.)

INTERSTATE CONFERENCE ON WATER PROBLEMS

F. W. Montanari substituted for Dr. Wilm, currently Chairman, Interstate Conference on Water Problems, in making the presentation on the origin, purposes, and accomplishments of the Interstate Conference on Water Problems, Council of State Governments.

BUSINESS SESSION

R. A. Vanderhoof, Division of Water Supply and Pollution Control, Public Health Service, discussed that agency's findings as to water requirements, procedures followed in arriving at those findings, and the manner in which they will be reported.

Morris Deutsch, U.S. Geological Survey, reported upon ground water studies, summarized findings, and distributed maps.

Melvin L. Cotner, Economic Research Service, Department of Agriculture, discussed agricultural land use - present and projected - production potential, and water management needs. He furnished tables of pertinent data and suggested how this information may be used.

The Federal Power Commission presented pertinent maps and charts on the power phase of the Ohio River Basin Comprehensive Survey.

There was discussion relating to distribution and review procedures. The Projective Economic Study and the Hydrology Appendix are the only portions that are sufficiently far advanced to warrant distribution for review and comments. Useful information is disseminated in the form of pertinent data as early as possible - even before it is incorporated into a preliminary draft report. Such pertinent data is to be included in the minutes of the meeting as a means of distribution. At the meeting planned for January 1966, it is intended to complete preliminary data dissemination as far as possible, and to make available such outlines or preliminary drafts as are then in suitable form for distribution and informal review.

INTERSTATE MINING COMPACT - OBJECTIVES AND CURRENT STATUS

Herbert L. Wiltsee, Director, Southern Office, Council of State Governments, discussed the origin and current status of the effort to develop an interstate mining compact. Copies of the compact draft were distributed to committee members.

SUMMARY - SIXTH MEETING OF THE COORDINATING COMMITTEE

The sixth meeting of the Coordinating Committee was held 19-20 January 1966 at Cincinnati, Ohio. Brigadier General W. P. Leber, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen W. P. Leber, Chairman
Commerce	Carl M. Relyea - Alternate
HEW	Richard A. Vanderhoof - Alternate
Interior	Fred Wampler
FPC	L. B. Woll - Alternate
Illinois	Not Represented
Indiana	John E. Mitchell
Kentucky	Not Represented
Maryland	Michael L. Rodevick - Alternate
New York	F. W. Montanari - Alternate
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate

Tennessee	Harold V. Miller
Virginia	J. M. Alexander - Alternate
West Virginia	Bern Wright

The Chairman announced:

George E. Pickett has replaced Walter Fuller as Director, North Carolina Department of Water Resources and as a member of the Coordinating Committee.

David Walker, formerly alternate for Gene Graves of Illinois is now Resource Coordinator in the Office of Governor Hoff, Vermont.

Joseph I. Perrey, long-time Chief Engineer, Indiana Flood Control and Water Resources Commission has joined the Office of Appalachian Studies as Water Resources Coordinator.

George Feil, formerly of the Kansas City District, has replaced Ed Abbott as Chief of the Engineering Division, U.S. Army Engineer Division, Ohio River.

Washington visitors in attendance were General Woodbury and Russell Morgan, Office of the Chief of Engineers; and Dr. Lord, Office of the Secretary of the Army.

Kentucky voters approved a $176 million bond issue for capital improvements; and New York has initiated a one billion dollar state-financed program to support and share the cost of sewage treatment works to be constructed by political subdivisions.

OHIO RIVER FORECAST CENTER

Carl Relyea, U.S. Weather Bureau, discussed the origin and development of the forecasting service, which now predicts low flow during periods of drought, as well as flood flows during periods of excessive rainfall.

General Leber commented upon the importance of river forecasting and the need for good communications; as well as the need for a continuing program of public information and education, so that people will understand they can never be assured of 100 percent protection against floods. To some degree it will always be necessary to depend upon the forecast system, flood plain zoning, and other non-structural measures to avoid flood losses.

BUSINESS SESSION

Preparation of the remaining text for the Electric Power Appendix, to include summary and conclusions, has been delayed by the November 9 blackout in the Northeast. The task is nearly 90 percent completed, and submission is expected by 1 March 1966.

Senate Bill 1446, relating to wild rivers areas, passed the Senate on 18 January 1966. It provides that in all planning for use and development of water and related land resources, consideration is to be given to wild river areas. River basin and project reports shall discuss such potentials. Appendix H, prepared by the Bureau of Outdoor Recreation, deals with this subject. Additional information will be furnished if needed. The National Park Service plans to employ an archeologist or historian in order to take part in the Ohio River Basin Comprehensive Survey. Differences between the Bureau of Mines and the Corps of Engineers regarding preparation of a mineral study are being resolved.

Appendix H, Outdoor Recreation has been distributed in draft form and constructive comments have been received. The report is to be ready for submission by the end of Fiscal Year 1966.

Robert E. Cleary, Bureau of Sport Fisheries and Wildlife, discussed Appendix G, Fish and Wildlife Resources of the Ohio River Basin. The Bureau of Commercial Fisheries has also participated in the preparation of this appendix. It presents: (1) details of the existing resource; (2) projection of future demands; and (3) generalized method by which needs can be satisfied. Review copies have been distributed to state and Federal agencies concerned. Importance of the fresh water mussel shell resource in the Wabash and White River Basins was discussed. There are habitat problems and possibly problems of overuse.

Porter Ward, U.S. Geological Survey, reviewed the Ground Water Study and the nature of the report now in reproduction. Mr. Sommerville noted that portions of the Ground Water Appendix are based upon reports issued by the Pennsylvania Bureau of Topographic and Geologic Survey; but references to the source has been omitted. He asked that this omission be corrected in the final report. Mr. Ward conceded that much of the geology has been taken from state publications. The completed report will carry full credit for sources of data.

Mr. Montanari asked if New York counties had been included in BOR considerations. Mr. Pierce replied in the affirmative.

Harold G. Wilm has resigned as Conservation Commissioner of the State of New York. An accelerated water resources study program requested by Governor Rockefeller is now underway. Consultants have been retained for basins in the western portion of the state. A reconnaissance type study is to be completed by 1 August 1966.

A preliminary draft of the navigation element of the Ohio River Basin Comprehensive Survey is scheduled for distribution by about 1 April 1966.

Progress continues on Appendix J, State Laws, Policies and Programs. Reports for Virginia and Ohio have been reproduced in draft form. New York's report has been submitted but not yet released for reproduction. The Tennessee report was received 19 January 1966. Others are in various stages of preparation.

The nature, content and time schedule for completion of Appendix M, Flood Control, were discussed. A preliminary draft is about 75 percent completed. It is scheduled for dissemination for informal review by about 15 February 1966. Potential flood damage by tributary basins was graphically presented and discussed.

Data on watershed projects, land treatment measures, flood damages in upstream watersheds, timber resources and agricultural land use that will be included in Appendix F, Agriculture was summarized. Copies of an incomplete document consisting of text, tables, charts and maps indicative of the kind of data to be included in the appendix was distributed.

Work on Appendix D, Water Supply and Water Pollution Control has progressed to the point that tabular data are completed and the remaining subbasin sections are being prepared. A preliminary draft of the General section has been prepared.

It will be the purpose of Appendix K, Development Program Formulation to recognize the gaps that exist or will exist between the present situation and the needs of the future, and to outline general programs and priorities for filling them. It will draw from all other appendices and attempt to analyze needs and problems of the Ohio River Basin as a whole. Findings will be presented by subbasins. The interrelationship of various functional needs; and the compatibility or independence of potential solutions are to be considered. Framework plan formulation will be undertaken in Appendix K. A first draft is scheduled to be completed by about 1 July 1966.

The contemplated nature and content of the Main Report and the range of increase of water and land resource needs from 1960 to 2020 indicated was reviewed. A time schedule for submission of preliminary drafts, review, and completion in final form of various appendices and the Main Report was discussed.

In response to a question, General Leber said it is his concept that the report of the Ohio River Basin Comprehensive Survey will outline a program for further study, and give an estimate of costs. While it may not contain a specific priority list, it will certainly give much guidance as to the priority of need for further study and development in tributary basins, and chart the course ahead. Type II studies, of course, are underway presently in the Wabash and Kanawha Basins.

NEW LEGISLATION

The Watershed Protection and Flood Prevention Act (PL 566) has been amended by PL 89-337, so as to increase the allowable flood storage capacity of a single impoundment from 5,000 to 12,500 acre-feet. In this connection, an Interagency Agreement was completed on 23 September 1965, between the Corps of Engineers and the Soil Conservation Service; which provides a basis for deciding which agency should assume primary responsibility for flood protection in a given area; and furnishes guidance for dealing with local interests.

The Omnibus Bill, PL 89-298, authorized seven new "framework" studies. Section 101 of the Bill provides unprecedented authority for the Chief of Engineers (in cooperation with Federal, state and local agencies as contemplated in the Water Resources Planning Act of 1965) to plan, construct, operate, and maintain reservoirs, conveyance facilities, and purification facilities authorized as a result of such planning. Section 214 grants specific authority for the Chief of Engineers to cooperate with the State of New York, and political subdivisions and agencies thereof, in the preparation of State-initiated comprehensive plans. Ten additional reservoirs were authorized in the Ohio River Basin.

The Water Resources Planning Act of 1965 (PL 89-80) formally establishes a Water Resources Council, provides for river basin commissions, and for financial assistance to the states for water resources planning.

OBSERVER COMMENTS

R. L. Ireland, Chairman, Water Management Advisory Council to the Ohio Water Commission (also Chairman, Lake Erie Watershed Conservation Foundation and retired Chairman of the Board, Consolidation Coal Company) spoke briefly. He said progress necessitates change; but he is opposed to change for change's sake. The program being discussed in the Coordinating Committee should be of great assistance. Each state within less than two years must come up with classifications for water use, and standards. This means that it will be necessary to decide what use will be made of land adjacent to watercourses, because standards set will govern who can afford to build on such a location. The states must first set use classifications, then follow that with the standards for quality. This is just the reverse of what HEW has been trying to do.

He expressed concern about the proliferation of agencies and asked, "How does the Appalachian Program fit into all this?" Coordination is very essential to achieve progress. It is progress in the field of water management to which Mr. Ireland is dedicating his retired years.

SUMMARY - SEVENTH MEETING OF THE COORDINATING COMMITTEE

The seventh meeting of the Coordinating Committee was held on 15-16 June 1966 at Indianapolis, Indiana. Brigadier General W. P. Leber, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen W. P. Leber, Chairman
Commerce	Carl M. Relyea - Alternate
HEW	Not Represented
Interior	Fred Wampler
FPC	A. M. Monaco - Alternate
Illinois	Charles E. Mortimore - Alternate
Indiana	John E. Mitchell

Kentucky	Joseph L. Tucker - Alternate
Maryland	Robert M. August - Alternate
New York	F. W. Montanari
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	A. J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Dale F. Jones - Alternate
West Virginia	Not Represented

The chairman announced:

The Federal Water Pollution Control Administration has been transferred from the Department of Health, Education and Welfare to the Department of the Interior. HEW is currently without representation on the Coordinating Committee.

R. Stewart Kilborne has been appointed Commissioner of the New York Department of Conservation, succeeding Dr. Harold Wilm. Mr. Montanari has been designated by Governor Rockefeller as New York's principal member on this Committee. "Nick" Barbarossa, Assistant Director, Division of Water Resources is the new alternate.

Bern Wright has resigned as Chief, Division of Water Resources in West Virginia, to join the Federal Water Pollution Control Administration in Washington.

Commissioner Matlick of Kentucky has been named Chairman of ORSANCO.

A Planning Division has been established as an element of the organizational structure at the Ohio River Division and other division offices throughout the Corps of Engineers.

A meeting with state and commonwealth members of the Coordinating Committee was held in Cincinnati on 10 May 1966 to consider probable cost of water and related land resource planning and development programs to the year 2020. On 19 May an interagency work group met for further consideration of the same subject. Minutes of both meetings have been distributed to the Coordinating Committee.

The Chairman has been ordered to Washington, effective 15 July 1966, to become Director of Civil Works in the Office of the Chief of Engineers.

HISTORY - APPENDIX A

A preliminary draft of Appendix A, History of Study, was distributed 9 June 1966. Material contained in it should be useful to members in formulating views and comments on other appendices and the Main Report. The history of the Ohio River Basin Comprehensive Survey should be useful to others who are, or will be engaged in the making of framework studies.

STATE REPORTS - STATUS AND FINDINGS

Reproduction and distribution in draft form of State Laws, Policies and Programs documents for Virginia, Ohio, Tennessee, Kentucky and West Virginia was reported. Others are nearing completion. Trends toward modification of traditional riparian rights concepts, greater centralization in planning and administration and increasing reliance upon federal matching funds or grants are noted.

In discussion, the finding of increasing reliance upon federal sources of funds was questioned, and the growing availability of such funds noted. The vital role of the states in water management, and the significance of state laws was emphasized by the Chairman, who suggested that Appendix J, State Laws, Policies and Programs, may prove to be one of the most valuable elements of the report.

PLANNING, PROGRAMMING, BUDGETING SYSTEM

B. Joseph Tofani, Office, Chief of Engineers discussed the origin, current status, and objectives of the new planning-programming-budgeting system. Its introduction was announced by the President in August 1965. It is designed to show the relationship between various programs, provide a better basis for evaluating alternatives, aid in identifying goals and choosing those most urgent, and to establish a better basis for evaluating alternative means of reaching them most effectively and at least cost.

Surveys, such as the Ohio River Basin Comprehensive Survey, will give a better picture of needs and thus become essential input for PPBS analysis. The kinds of projections that will be available are already becoming apparent in the Ohio River Basin study.

BUSINESS SESSION

Agriculture's progress has continued on schedule since the last meeting of the Committee. Analyses and projections for Appendix F, Agriculture, have been completed. Irrigation is currently practiced on 94,000 acres in the basin. There is need for drainage improvements on some six million acres, not including marshes, wastelands, or timber lands. Potential sources of irrigation water will be shown for each subbasin where need is indicated.

Agriculture has coordinated with other participants and adjustments have been made. The result is the best estimate that can be made of that land which will remain in, and be required for agriculture. Much of this will accommodate other uses such as hunting, fishing, and recreational activities.

Henry Caulfield has been named Executive Director of the Water Resources Council. With the transfer of FWPCA from the Department of Health, Education and Welfare to Interior, R. A. Vanderhoof has become

Regional Program Director for the Ohio River Basin, and he will serve on Interior's North Central Field Committee.

The draft of Appendix G, Fish and Wildlife Resources, has been reviewed and 36 interested agencies submitted comments. Modifications have been made, and each agency notified of disposition of its comments. Graphics, photographs, and a section on cost estimates are being added. Both state and Federal expenditures are considered. Copy for Appendix G is to be ready for final reproduction by 1 July 1966.

Major changes have been made in Appendix H, Outdoor Recreation, involving (1) format and (2) additional data requested by the Corps of Engineers. A section on wild rivers is included. Recreational opportunities provided by the private sector of the economy have not been considered. Data is not available.

Interior agencies have collaborated with Dr. Melvin, a consultant retained by the Corps of Engineers, to prepare material on mining and the mineral industry. The Bureau of Mines has prepared a map relating to coal reserves and production as well as information on other minerals.

A preliminary draft of Appendix L, Navigation, is ready for internal staff review. The growing economy will increasingly require water transport in the Ohio River Basin. The navigation potential of major tributaries is being considered.

Appendix M, Flood Control, has undergone staff review by the Corps of Engineers and by the Department of Agriculture. Some additions and revisions have resulted. This appendix presents flood damage history, identifies problem areas, considers the magnitude of the problem and indicates potential solutions. Expenditures two and one-half times greater than those already made for downstream flood control, and 11 times what has been spent on upstream flood control, will be needed to meet the needs of the year 2020.

A draft of Appendix D, Water Supply and Water Pollution Control, has been distributed to members of the Committee. Part I treats the basin as a whole. Part II deals with major tributaries or combinations thereof and Part III, methodology. Recommendations include adequate treatment, storage for streamflow regulation, investigation of advanced waste treatment, abatement of mine drainage pollution and a program for preventing pollution from oil field wastes.

Appendix K, Development Program Formulation, will be the basis for conclusions and recommendations in the Main Report. General conclusions are now being drawn as to probable program costs to the year 2020. Technological advances and their possible effects are being considered.

A rough draft of approximately half of the Main Report has been prepared.

The need for small meetings and informal discussions from now on to the end of the study is foreseen, in order to minimize the number of problems that have to be resolved by the full Coordinating Committee.

Local public and private viewpoints are to be obtained through state representatives on the Committee. An extensive public education and information program should be carried on after the study has been completed. The Chairman recommended, as he is leaving the Ohio River Division, that funds be allocated and used for this purpose.

Four governors have requested formation of an Ohio River Basin commission under Title II of the Water Resources Planning Act. The opinion was voiced that such a commission may eventually take over some of the functions of the Coordinating Committee and become the vehicle to provide continuity.

RECENT DEVELOPMENTS - WATER QUALITY

FWPCA has arranged for the U.S. Geological Survey to extend its ground water studies to include quality and related quantity in the Ohio River Basin.

William E. Bullard, FWPCA, explained the program of mine drainage demonstration projects being undertaken. There are four projects in the Ohio River Basin.

John R. Hyland, FWPCA, discussed the Monongahela River Mine Drainage Remedial Project, initiated to determine the sources, types, and amount of pollution from coal mines in the Monongahela River Basin, as well as means and cost estimates for abating such pollution.

NEW WATER RESOURCES LEGISLATION IN KENTUCKY

New water legislation enacted for Kentucky is conceived to be a move away from full riparian rights as well as from the doctrine of prior appropriation. It might be characterized as a doctrine of "allocation."

SUMMARY - EIGHTH MEETING OF THE COORDINATING COMMITTEE

The eighth meeting of the Coordinating Committee was held 14-15 September 1966 at Columbus, Ohio. Colonel John C. H. Lee, Jr. presided. Attendance of regular members and alternates was as follows:

Agriculture	Kenneth E. Grant
Army	Col John C. H. Lee, Jr. - Chairman
Commerce	Wayne Lander - Alternate
HEW	John D. Faulkner
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James Dooley - Alternate

Indiana	William J. Andrews
Kentucky	Joseph L. Tucker - Alternate
Maryland	Robert M. August - Alternate
New York	F. W. Montanari
North Carolina	Not Represented
Ohio	Fred E. Morr
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Dale F. Jones - Alternate
West Virginia	Edgar N. Henry

The Chairman announced:

Brigadier General W. P. Leber, former Chairman, has assumed his new responsibilities as Director of Civil Works in the Office of the Chief of Engineers, Washington, D.C.

John D. Faulkner, Associate Regional Health Director, U.S. Public Health Service, has replaced Lloyd Gebhard as the representative on this Committee of the Department of Health, Education and Welfare.

William J. Andrews, Acting Director of the Indiana Department of Natural Resources, has replaced John Mitchell who resigned to run for elective office.

Jim Dooley of the Illinois Department of Business and Economic Development is, for the first time, representing Gene Graves.

West Virginia's new member of the Committee is Edgar N. Henry, Acting Chief, Division of Water Resources.

WATER AND RELATED LAND RESOURCE PROBLEMS, PROGRAMS AND POLICIES IN THE STATE OF OHIO

Fred E. Morr, Director, Department of Natural Resources, welcomed the Committee to the capital city of the "Buckeye State." Ohio has embarked upon a $100,000,000 six-year capital improvement program of outdoor recreation and water development. A large part of this program is in cooperation with federal agencies, including the Corps of Engineers, Soil Conservation Service, Bureau of Outdoor Recreation, Economic Development Administration, U.S. Fish and Wildlife Service, and the Federal Water Pollution Control Administration. Director Morr then introduced the following associates:

Colonel C. T. Foust, Staff Coordinator, discussed the Corps of Engineers organization, programs and projects in Ohio.

Melvin J. Rebholz, Chief, Division of Parks and Recreation outlined the ongoing operations and capital improvements program of his agency.

George Eagle, Chief, Division of Sanitary Engineering, Department of Health, discussed Ohio's water quality program.

C. V. Youngquist, Chief, Division of Water, described the background, accomplishments and current status of Ohio's water inventory studies.

S. L. Frost, Executive Director, Ohio Water Commission, summarized the role of the Commission and its current activities.

BUSINESS SESSION

Study progress was reviewed. The states have completed their respective drafts for Appendix J, State Laws, Policies and Programs. Reviews of other documents have been thorough and timely, and the comments have been constructive. However, slippages in the schedule are occurring and much more remains to be done as of this date than had been anticipated. Extensive changes resulting from review comments have resulted in a heavy work load of processing and reproduction. Preparation and review of the informal review draft of Appendix K, Development Program Formulation, must precede any significant progress on the Main Report.

The informal field review of Appendix A, History of the Study, has been completed. It produced only constructive comments and there are no outstanding conflicts or differences of opinion remaining to be resolved. This document cannot be finalized until the study has been completed.

A summary of the comments received on Appendix C, Hydrology, and the action taken on each was distributed to the Coordinating Committee members on 26 August 1966. No unresolved matters remain. The revised document is scheduled for distribution about 1 November 1966.

Good progress is being made on Appendix I, Electric Power. No problems are anticipated which cannot be resolved to the satisfaction of all concerned.

The informal review draft of Appendix D, Water Supply and Water Pollution Control, has been widely distributed. Extensive comments were received from members of the Coordinating Committee, from ORSANCO and others. A number of meetings will be required to resolve them. It is expected to take about 36 man-months to revise Appendix D for reproduction by about mid-March 1967.

The final draft of Appendix E, Ground Water, has been completed and reproduction is underway.

A field review draft of Appendix G, Fish and Wildlife Resources, was circulated in mid-January 1966. Comments were received directly from 23 resource-oriented units of state government and ten Federal agencies. All were informed of the disposition made of their comments. The revised Appendix G has been submitted for final printing.

The first draft of Appendix H, Outdoor Recreation, was released for review in November 1965. Comments were received from eight states and eight Federal agencies. The format has now been rearranged to conform to a standard established by BOR, and major revisions have been made in the preliminary draft. Reproduction will take place in October 1966.

Informal review copies of Appendix F, Agriculture, were distributed on July 7. Comments have been received and progress continues on schedule. The USDA field advisory committee met recently to study and act upon comments. Most of them were immediately resolved. In some cases, however, it appears that compliance would be beyond the scope of a Type I study. The appropriate response may be to identify the need and point out the desirability of further and more detailed investigations. Agriculture plans to retype the final report for printing by October 1.

Attention was invited to the forword prepared for Appendix J, State Laws, Policies and Programs. There has been gratifying progress on this Appendix. Review by author states is necessary to finalize it for reproduction.

Appendix L, Navigation, is ready for informal review. Copies are being mailed to members of the Committee.

Informal field review of Appendix M, Flood Control, is in progress. As a first step in carrying out the recommendations of the Task Force on Federal Flood Control Policy published as House Document No. 465, 89th Congress, Second Session, the President issued an Executive Order directing all Federal agencies to evaluate flood hazards in locating Federally-owned or financed buildings, roads and other facilities, and in disposing of Federal lands and properties.

Appendix K, Development Program Formulation, summarizes water and related land needs for the Ohio River Basin, presents the criteria and methodology of satisfying those needs, and indicates the magnitude of the problem, alternative solutions, and generalized costs. A preliminary draft has been completed.

THE ROLE OF THE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

John D. Faulkner, Associate Regional Health Director, U.S. Public Health Service, expressed pleasure at having been appointed to represent the Department of Health, Education and Welfare on the Coordinating Committee. He discussed the modified role of HEW since the transfer of the Federal Water Pollution Control Administration to the Department of Interior.

THE WATER RESOURCES COUNCIL

Reuben Johnson, Deputy Director, discussed the functions and status of the Water Resources Council and progress to date in implementing the Water Resources Planning Act of 1965.

SUMMARY - NINTH MEETING OF THE COORDINATING COMMITTEE

The ninth meeting of the Coordinating Committee was held 25-26 January 1967 at Cincinnati, Ohio. Brigadier General Willard Roper, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Kenneth E. Grant
Army	Brig Gen Willard Roper, Chairman
Commerce	Carl M. Relyea - Alternate
HEW	John D. Faulkner
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James P. Dooley - Alternate
Indiana	William J. Andrews - Alternate
Kentucky	James A. Thetford - Alternate
Maryland	Not Represented
New York	F. W. Montanari
North Carolina	Not Represented
Ohio	S. L. Frost & Robert W. Teater - Alternates
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	E. W. Ramsey - Alternate
West Virginia	Edgar N. Henry

The Chairman announced:

John Mitchell has returned to his former position as Director of the Indiana Department of Natural Resources and as a member of this Committee.

The word "acting" has been deleted from Ed Henry's title. He is now Chief, Division of Water Resources, West Virginia Department of Natural Resources. T. R. Samsell has replaced Robert McDonough as Director.

In the Corps of Engineers' office at Cincinnati there have also been some changes. Will Brewer retired as Chief of the Planning Division and his replacement has not yet been named. George Feil, formerly Chief of the Engineering Division, has become Chief of the Planning Division in the Directorate of Civil Works in Washington.

RC&D PROJECTS IN THE OHIO RIVER BASIN

The Resource Conservation and Development program was initiated under authority of Sec. 102 of the Food and Agriculture Act of 1962 (PL 87-703). Projects are locally initiated and sponsored to expand economic opportunities through orderly development and wise use of natural resources. Success depends largely upon local initiative and leadership. All agencies of the Department of Agriculture assist project sponsors. Administrative leadership is a responsibility of the Soil Conservation Service. Currently, there are 26 projects in the nation. Six are in the Ohio River Basin. The Lincoln Hills project in Indiana, oldest and most advanced of all,

was discussed by Mitchell G. Hassler, Soil Conservation Service, who is the Project Coordinator.

PUBLIC INFORMATION AND THE OHIO RIVER BASIN SURVEY

John W. Lane, Corps of Engineers, invited attention to the public information plan outlined in Inclosure 12, Minutes, second meeting of the Coordinating Committee, and reviewed measures to implement it. He suggested development of a brochure and production of visual aid material.

USE OF BASIN STUDY RESULTS IN PLANNING WATER RESOURCES DEVELOPMENTS FOR APPALACHIA

The Chairman called attention to the similarities and differences of the Ohio River Basin Comprehensive Survey and the water study directed by Sec. 206 of the Appalachian Redevelopment Act. Forrest O. Swiggart, Office of Appalachian Studies, pointed out that the unique objective of the Appalachian water study, - to stimulate economic development, - requires new procedures for economic evaluation and benefit-cost analysis. Data compiled for the Ohio River Basin Comprehensive Survey has been found useful, especially Appendices D, Water Supply and Water Pollution Control; J, State Laws, Policies and Programs; and M, Flood Control. Appendix B, Projective Economic Study, is being used, but it is not entirely satisfactory for Appalachian study needs.

FLOOD PLAIN MANAGEMENT SERVICES

In introducing this subject, the Chairman called attention to the report of the White Task Force (House Document No. 465, 89th Congress, 2nd Session) and the Executive Order issued 10 August 1966. Joseph Perrey who heads up Flood Plain Management Services for the U.S. Army Engineer Division, Ohio River, reported action taken to implement the program. It is not the intent to deny or prevent use of flood plain lands; but rather to provide information and assistance to the end that uses of land and developments undertaken will not be of such nature as to increase the future flood damage potential. Information and assistance will be made available to states and political subdivisions; and they will be encouraged to adopt appropriate regulatory programs.

BUSINESS SESSION

Secretary Udall has recently established an Office of Ecology under the direction of Dr. John Buckley, Jr. Increasingly federal, state, and local agencies will be faced with meeting the demands of ecologists to preserve unique areas as well as the fauna and flora found in such areas.

Appendix D, Water Supply and Water Pollution Control, is in the process of being rewritten in the light of informal field review comments. It is hoped that it can be ready for printing by 1 March.

Informal review of Appendix F, Agriculture, has been completed and it has been transmitted to the Corps of Engineers for final printing. A

reply in writing advising of the actions taken was made to each Coordinating Committee member who submitted comments. There were no major revisions or rearrangements.

The second edition of Appendix I, Electric Power, has now been completed by the staff of FPC and reprocessed by the Corps of Engineers for distribution. Comments received were given due consideration, and every effort was made to comply where appropriate with the revisions suggested. A small number of comments calling for additional data and expansion of text material were not acted upon because of personnel and time limitations. Lack of this material will not weaken the Appendix. None of the comments received controverted in any significant way the general findings presented in the first draft.

The proposed text of a brief introductory statement for Appendix J, previously distributed, has now been adopted since no adverse comments were received. All states but two have completed reviewing the preliminary draft. Since Appendix J contains a great deal of information about non-Federal developments, and about the participation of states and local interests in projects undertaken or assisted by Federal agencies, an active demand for copies is anticipated. Reproduction in sufficient quantity to provide each state with 100 copies is intended.

Informal review comments on Appendix L, Navigation have been received from all participating agencies but two. A summary of the comments and the action taken on each was distributed to Coordinating Committee members. This Appendix is now being finalized for reproduction.

Informal review of Appendix M, Flood Control, produced a total of 116 comments from federal agencies and states. A list of the comments and the action taken in regard to them has been furnished to members of the Committee. There are no outstanding conflicts or differences of opinion remaining to be resolved.

The nature and current status of Appendix K, Development Program Formulation, was discussed. Criteria and procedures for subbasin analysis were reviewed in relation to needs and solutions for the basin as a whole. The framework plan, conceived from the results of such analysis, will present a development program with construction timing, cost, and responsibilities set forth in broad terms for the entire Ohio River Basin. Progress on Appendix K is not as rapid as had been anticipated.

A chart showing the status of all elements of the report as of 15 January 1967 was exhibited. Of the 14 documents making up the report, eight are completed or in final reproduction. In order to provide Committee members the latest available information at the earliest possible time, and to allow the maximum time for final field level review, each document will be distributed as soon as printed. The final field review comments will deal with the report as a whole rather than with the individual appendices.

STATE WATER RIGHTS AND REGULATIONS AS RELATED TO WATER AND ASSOCIATED LAND RESOURCE PLANNING AND DEVELOPMENT

Harold H. Ellis, Economic Research Service, U.S. Department of Agriculture, who has made special studies of the subject, presented a paper on State Water Rights. Court-made rules provide a substantial part of the water law in most states. These are of a general nature and their application may vary with the circumstances. Concepts of riparian rights have been modified to some extent. Notwithstanding contractual and other possibilities under court-made rules, increasing difficulties may be encountered as the relative water abundance in eastern states declines due to expanding needs, uses and conflicts. Those who are engaged in planning may be particularly concerned with the potential facilitating or retarding effects of state laws upon the implementation of plans. The existing legal framework is not necessarily permanent. It may be modified in various ways. The need for new legislation may be minimized by taking advantage of little used provisions of existing laws and by changes in rules or practices of administrative agencies. Interstate and federal-state relationships and arrangements may be significant in considering comprehensive development of the Ohio River Basin. By consensus, Mr. Ellis's paper is to be included in Appendix J, State Laws, Policies and Programs.

INTRA-STATE COORDINATION PROBLEMS AND PROCEDURES IN BASIN PLANNING

Alan J. Sommerville spoke for the Commonwealth of Pennsylvania. The Secretary of the Department of Forests and Waters has been designated by the Governor as State Water Resources Coordinator. The Coordinating mechanism is within that department. A fairly good system for dealing with interstate and intra-state coordination has developed, beginning with the Delaware Basin study. In that study the Commonwealth took great pride in meeting deadlines. With the increasing number of studies in progress, it is not now possible in all cases to do so, and some agencies are completely unable to cope with the number of reports which they receive for review. Among the Commonwealth's pet peeves are (1) short deadlines; (2) meetings called on short notice; and (3) contacts made without the knowledge of the designated Coordinator. In order to resolve conflicting views between agencies of the Commonwealth, and to do an effective job, the State Water Resources Coordinator must know what is going on. While it is recognized that the increasing number of studies in progress are the result of Congressional action, many of the states have reached the point where they feel that a breathing spell is needed.

Robert W. Teater of Ohio expressed concern that states may have asked for so many Federal programs and projects that they may tend to become committed beyond their capabilities. Often the planners are not in a position to see that projects are carried out. There is need to relate planning to what can be accomplished within the states' financial resources and organizational structure. Ohio has approximately 1,300 townships, 88 counties, 88 soil and water conservation districts, 100 sewer and water

districts, 33 conservancy districts, and some 650 municipalities, all with some responsibility for planning and action in the field of water resources. The State of Ohio has accepted the primary responsibility for such planning. The Director of Natural Resources has been named by the Governor to coordinate such planning.

Harold V. Miller conceded that intra-state coordination has not achieved perfection in Tennessee. No single office is universally recognized as the essential focus of such coordination. Within the functional agencies of the State relatively comprehensive programs are going forward within the bounds of their responsibility and authority. In the process of carrying forward the work of increasing numbers of Federal programs, flexibility has been diminished. Without doubt the broader Federal support has increased the tools (especially financial) in the advancement of overall programs. Nevertheless, a degree of rigidity has been introduced. For better or for worse, guidelines have taken the place of innovation. Formal progress reports have, to some extent, eclipsed intra-state conversations regarding achievements. Tennessee holds that forceful coordination has less chance of willing acceptance and fullest achievement than the leadership exercised through a comprehensive plan mutually acceptable to the various agencies; and to which the programs of the various agencies can make a tangible contribution. Funds that may become available under Title III of the Water Resources Planning Act will be utilized initially to augment the planning work underway in the comprehensive State planning program. This will provide a basis by which Tennessee can become more than a passive partner; take more initiative in the process of selection, location, characteristics, and timing of projects; and exercise greater leadership in planning for the optimum use of new resources. Meanwhile, relationships with the Federal construction agencies are smooth and constructive.

OBSERVER COMMENTS

At the invitation of the Chairman, Harry Steele of the Water Resources Council offered comments:

The Water Resources Council is a cabinet-level committee, the Chairman of which is Secretary Udall. The Council is concerned with national policy and coordination; and with the establishment of principles, standards and procedures for planning and evaluation. Title II of the Water Resources Planning Act provides for establishing river basin commissions. Council favors a policy that these commissions should cover large areas. Eventually there might be 12 to 15 of them to cover the whole country. Among the requirements on the Council is continuing study of the adequacy of water supplies, and a bi-annual report to the Congress. Regions involved in Type I studies will be asked to make a short field report as part of the first bi-annual assessment. The Ohio Basin is in the best shape to write such a report because of the work that has been done on the Ohio River Basin Comprehensive Survey.

SUMMARY - TENTH MEETING OF THE COORDINATING COMMITTEE

The tenth meeting of the Coordinating Committee was held 6-7 June 1967 at Marietta, Ohio. Brigadier General Willard Roper, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Brig Gen Willard Roper
Commerce & Transportation	Sylvester E. Ridge
HEW	Gerald W. Ferguson - Alternate
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James P. Dooley - Alternate
Indiana	John E. Mitchell
Kentucky	James A. Thetford - Alternate
Maryland	Not Represented
New York	John C. McMahon - Alternate
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Not Represented
Virginia	Roy L. Brown - Alternate
West Virginia	Edgar N. Henry

The Chairman announced:

Thomas B. Evans, former SCS State Conservationist in West Virginia, has replaced Kenneth E. Grant as Agriculture's member on the Committee. Mr. Grant is now in Washington, having assumed the position of Deputy Administrator of the Soil Conservation Service.

James A. Thetford has been formally designated as alternate for Commissioner Matlick of Kentucky, - a role in which he has been serving for some time.

Don Williams, formerly of Huntington District, has been named Chief, Planning Division, ORD. Milton Mindel, formerly of Memphis District, has been named Chief, Engineering Division, succeeding George Feil.

Input to the Ohio River Basin Comprehensive Survey which has been completed includes Appendix E, Ground Water; Appendix F, Agriculture; Appendix G, Fish and Wildlife Resources; Appendix H, Outdoor Recreation; and Appendix I, Electric Power. States and commonwealths have completed their work on Appendix J, State Laws, Policies and Programs.

Of those elements of the study for which the Corps of Engineers has had primary responsibility, Appendix B, Projective Economic Study, has been completed as has Appendix C, Hydrology. Appendix L, Navigation; and Appendix M, Flood Control, have been reviewed in draft form and revised in consideration of comments received. Appendix K and the Main Report are yet to be completed.

REMARKS OF S. DURWARD HOAG, SR.

The Chairman presented Mr. S. Durward Hoag, Sr., long-time resident of Marietta, Past President of the Chamber of Commerce, and for 20 years the writer of a weekly news page on local history, civic affairs, and river matters. Mr. Hoag welcomed the Committee to Marietta. Present-day travelers, he said, acclaim the magnificent beauty of this area as did the early settlers and the Indians. The factors that have produced economic growth in the Ohio Valley include coal and other mineral resources, abundant labor supply, low-cost water transportation, and an excellent rail and highway system. The greatest flood of record reached ten and one-half feet over the first floor of the Lafayette Motor Hotel in which this meeting took place. The Muskingum Watershed Conservancy District impoundments and other reservoirs have now provided a welcome degree of flood protection.

INDUSTRY'S STAKE IN WATER MANAGEMENT

Harold L. Robinson, Plant Superintendent, Union Carbide Chemicals and Plastics, emphasized the importance of water and water transportation to his company. Barging operations from and between Ohio Valley plants involve ores from Africa and Asia, metals and alloys to the iron and steel centers, chemical raw materials and chemicals to and from the Gulf Coast, and coal from mines in Ohio and West Virginia. Plants use vast quantities of water for processing and cooling purposes. The area's unmatched combination of natural resources, including coal, gas, and water, together with an educated and industrious populace, have made it possible for the company to grow and prosper. Of Union Carbide's 74,000 domestic employees, more than 30,000 are in the Ohio River Basin.

A. R. Carter, Engineer, Technical Services Department, ORMET Corporation, discussed the nature and scale of his company's operation. As the nation's fourth largest producer of primary aluminum, ORMET is interested in the Ohio River as a means of transportation for bulk raw materials. The ORMET complex includes an alumina plant at Burnside, Louisiana; the reduction plant at Hannibal, Ohio; a fleet of bauxite ore ships and a long-term supply of bauxite in Surinam, South America. A primary factor in the location of the reduction plant at Hannibal was proximity to coal deposits for the production of power. The company is also interested in water quality and looks upon the river as a source of recreational enjoyment for employees and their families.

ESTABLISHING WATER QUALITY CRITERIA

William L. Klein recalled the early history of ORSANCO, the eight-state compact in which the states concerned agreed to undertake a pollution abatement program. He described the standards adopted and the manner in which these were established. This experience was then related to recent federal law calling upon the states to establish water quality standards for inter-state streams. He discussed the manner in which ORSANCO has assisted its member states in meeting these requirements.

ROLE OF THE OFFICE OF ECOLOGY

Ecological understanding, said Dr. John Buckley, Jr., Director, Office of Ecology, U.S. Department of the Interior, is necessary to assure that environmental manipulations undertaken for the benefit of man are, in fact, beneficial. The Department has important programs in applied ecology, many of which include some basic ecology. A program of research is needed. As a focal point of this effort, the Office of Ecology will maintain cognizance of research efforts related to the ecological program and assure that these efforts are properly related to more basic ecological considerations as well as to specific bureau program missions. Functions of the office are (1) to support research, (2) to support surveys, (3) to provide an evaluation and advisory service, and (4) to assist in creating a system of natural areas for scientific research.

FLOODS OF 1967

The 1967 flood was dissimilar to, and of lesser magnitude than the flood of 1964. The centers of heaviest precipitation are well to the south of the Ohio River Main Stem. Record stages were exceeded at points along the middle Monongahela and upper Little Kanawha. Damage, estimated at $35,000,000, would have been in the order of $158,000,000 except for the effect of existing reservoirs and local protection projects. Additional projects now under construction or in advanced planning could have prevented about half the damage that did occur.

ILLINOIS WATER PLAN

The Illinois Water Plan, a 450 page document, has recently been completed. Responsibility for its preparation was that of the Technical Advisory Committee, which consists of the heads of State agencies concerned with water resources. The project director was William C. Ackerman, Chief, Illinois Water Survey. Major recommendations are for the creation of a coordinating mechanism to be known as The Water Resources Board; and the establishment of a one billion dollar resources development fund. Governor Kerner has supported these recommendations in a special message to the Legislature.

1967 NATIONAL ASSESSMENT

The Water Resources Council asked the Coordinating Committee to prepare the Ohio Region Chapter for the 1967 National Assessment. An ad hoc work group of the Coordinating Committee met on 18 April and established a task force with members from Agriculture, Commerce, Interior, Army and the States of Indiana, Kentucky and Ohio. The task force prepared the draft which was distributed to members of the Committee on 26 May. By consensus, the Committee approved the draft.

BUSINESS SESSION

A series of color slides with accompanying notes is available for use by Committee members and participating agencies. A fold-out brochure is also in production.

Appendix D, Water Supply and Water Pollution Control, has been completed. The numerous informal review comments received have all been considered and changes have been made where appropriate. The report defines water supply problem areas and stream reaches where residual organic wastes will create problems during the periods of low flow. This is a gross appraisal which can be utilized to point up the more immediate water quality problem areas and guide detailed study required for solutions.

Ten of the eleven state reports to be included in Appendix J, State Laws, Policies and Programs, are ready for reproduction. When typing and correction of maps now in progress on the last one is completed, Appendix J will be ready for reproduction in final form.

Appendix K, Development Program Formulation, is scheduled for submission to the Coordinating Committee for preliminary review within a month. Corrected data from the final drafts of Appendix D, Water Supply and Water Pollution Control; Appendix L, Navigation; and Appendix M, Flood Control, is being incorporated.

To facilitate the informal review of Appendix K and the Main Report, Mr. Von Gunten recommended formation of an ad hoc task group which would include a representative of each member of the Committee. The task group would meet near the end of the formal field review period for clarification and advanced consideration of the comments of reviewers.

Discussion of the future role of the Coordinating Committee after completion of the Ohio River Basin Comprehensive Survey indicated a consensus that the Committee should remain in existence until such time as it might be supplanted by some other institutional arrangement for coordination, updating and implementation of this report.

SUMMARY - ELEVENTH MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee met on 10-11 October 1967 at Louisville, Kentucky. Colonel John A. Graf, Deputy Division Engineer, U.S. Army Engineer Division, Ohio River, presided in the absence of the Chairman, Brigadier General Willard Roper. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Col John A. Graf - Alternate
Commerce & Transportation	Not Represented
HEW	Gerald W. Ferguson - Alternate
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James P. Dooley - Alternate
Indiana	William J. Andrews - Alternate
Kentucky	James A. Thetford - Alternate
Maryland	Robert August - Alternate
New York	Not Represented

North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Kenneth A. Ackley, Jr. - Alternate
Virginia	J. M. Alexander - Alternate
West Virginia	Larry L. Anderson - Alternate

BUSINESS SESSION

Since the tenth meeting of the Coordinating Committee:

The informal field review draft of Appendix K has been completed.

Appendix J, State Laws, Policies and Programs, has been finalized and is now being printed.

Appendix D, Water Supply and Water Pollution Control, has been submitted to Committee members for formal field review.

It was decided to hold a technical work group meeting on 7-8 November; and a meeting of Coordinating Committee members or their representatives on 12-13 December. The purpose of these meetings is to discuss and resolve issues in advance of the submission of letter comments.

Reuben J. Johnson, Deputy Director, Water Resources Council, reviewed framework planning objectives. This review had been requested for reorientation of Committee members in preparation for the formal field review. The basic objective of a framework study is to provide a broad guide for the best use of water and related land resources in a region to meet foreseeable short- and long-term needs. Such studies should include consideration of (1) the timely development and management of these resources as essential aids to economic development and growth, (2) the preservation of resources to insure that they will be available for their best use as needed, and (3) the well being of all people as the overriding determinant in such planning.

The six major elements of the study, as indicated by Water Resources Council guidelines, are:

Projections and study of economic development;

Translation of economic projections into needs for water and related land resource uses;

Appraisals of the availability of water supplies including quantity and quality;

Appraisals of the availability and characteristics of related land resources;

Outline of the characteristics of projected water and related land resources problems; and

Alternative approaches that appear appropriate for their solution.

It is equally important to recognize what framework studies should not attempt to accomplish.

First, they will not include the amount of detail required for authorization of projects. Second, they should not be considered as final. They are dynamic, will require updating, and should be used as a basis for testing various alternatives for water and related land resource development. Third, a framework study is not just an inventory of water availability and needs. It includes an analysis which is the basis for a framework program. Fourth, it is not expected to provide an overall master plan for development.

A battery of color slides, developed for use in explaining the survey to the public, was exhibited and discussed. After an inconclusive exchange of ideas as to how the Committee might best proceed to inform the public concerning the Ohio River Basin Comprehensive Survey and its results, it was decided that the matter should be included in the agenda for the next meeting.

MANAGING RESERVOIR STORAGE IN THE OHIO RIVER BASIN

Formation of a Reservoir Control Center within the Ohio River Division office of the Corps of Engineers was announced. The long-range objective of the Center is to make maximum use of available technology so as to insure efficient operation of projects under Corps jurisdiction. The initial goal is to provide an analysis model for each tributary reservoir system and tie these together with a main-stem line. Coordination and consultation with states and other Federal agencies is contemplated. An advisory committee representing the various interests concerned could be very useful. In the Missouri River Division such a committee, with 19 members, meets twice each year, and makes recommendations to the Missouri Basin Inter-Agency Committee. Decision as to whether or not the Coordinating Committee could properly assume a similar role for the Ohio River Basin was deferred.

FUTURE ROLE OF THE COORDINATING COMMITTEE

The appropriate role of the Coordinating Committee in the future was discussed in the light of the advanced stage of the current study. Mr. Johnson suggested that formation of a river basin commission under Title II of the Water Resources Planning Act might be considered. The framework study, he said, is the first phase of a coordinated joint plan. The coordinated joint plan goes a step further and carries the projects needed in the next 10 to 15 years through the authorization stage. The staff of such commission would be expected to perform a coordinating function; while planning, per se, would be done by the existing talent available to

the Federal agencies and the states involved. The previously indicated consensus, - that this Coordinating Committee should remain in existence at least until the Ohio River Basin Comprehensive Survey has been completed, - was reconfirmed.

NATIONAL CONFERENCE OF STATE AND FEDERAL WATER OFFICIALS

Reuben Johnson, Water Resources Council, and William J. Andrews of Indiana reported upon the conference held at Denver, Colorado, on 6-8 September 1967, under the sponsorship of the Interstate Conference on Water Problems (Council of State Governments) and the Water Resources Council. This was the first joint meeting of these two organizations.

INDUSTRY'S STAKE IN THE MANAGEMENT OF OHIO RIVER BASIN WATER AND RELATED LAND RESOURCES

Electric power requirements for the nation double each ten years. Suitable sites for establishing large generating facilities are limited. Significant factors that must be evaluated are coal, water, manpower, and transmission problems. Industry has been attracted to the Ohio River Valley because of the network of flood control reservoirs which have stabilized streamflow and increased the available water supply for industrial and municipal uses. Improved river transportation through the development of a modern system of locks and dams has also been significant. These developments will continue to play an important role in the economic growth of the region. Walter C. Gumbel, Monongahela Power Company, was the electric power industry spokesman.

Water transportation has done a great deal for the coal industry and in so doing has brought about a low cost energy picture which is the envy of the entire world. The production of oil and gas from coal is not too far away; and this is the reason the oil industry is moving into the coal business. For instance, Continental Oil has taken over Consolidation Coal Company, and the Gulf people bought the Pittsburgh and Midway Coal Company. Tampa Electric and Florida Power Company on the West Coast of Florida are relying substantially on Green River coal from western Kentucky. It is shipped by way of the Green River, then the Ohio, down the Mississippi, and transferred to ocean-going barges for final movement in the Gulf of Mexico. Mr. W. E. Blewett, Vice President, Peabody Coal Company, said that, while his company is primarily interested in navigation, he realizes that a comprehensive basin-wide approach to water management is necessary.

The pulp and paper industry has plants in 48 states. There are about 700,000 employees. The Mead Corporation, one of the top ten, employs 20,000 people, 5,000 of them in Ohio. The world's largest center for the production of white paper is at Chillicothe. Four-thousand employees there, with an annual payroll of $37,000,000, use 74,000 tons of wood produced in the Ohio River Basin. Mead's Chillicothe complex uses 1,100 tons of coal a day which costs $2,000,000 a year. The National

Council for stream improvement is an autonomous organization devoted exclusively to research in the treatment of pulp and paper mill wastes. Through it the pulp and paper industry maintains five regional research centers. As a result of this research, the paper industry has invested $168,000,000 in waste treatment plants. By 1965, 80 percent of the mills in the industry had waste treatment plants of one kind or another in operation. While it still requires a half gallon of water to manufacture a sheet of white paper, the industry uses 50 percent less water today than it did 10 years ago. Ford T. Shepherd, Vice President, Mead Corporation, was spokesman for the pulp and paper industry.

THE NATIONAL WATER COMMISSION

President Johnson first called for the establishment of a National Water Commission in February 1966. The Bureau of the Budget responded by submitting the text of a bill which became S.3107; but the 89th Congress adjourned without its passage. A similar measure, was introduced as S.20 in the 90th Congress. Slightly differing versions have been passed by the Senate and the House, but the differences have yet to be reconciled in conference. It is expected that the bill will ultimately become law. The purpose of the proposed National Water Commission, to be composed of seven members who hold no other position in the federal government, is to provide for a comprehensive review of national water resources problems and programs.

Colonel Graf, Acting Chairman, announced before closing the meeting, that General Roper had, on the previous day, been alerted for an overseas assignment in Viet Nam. The General wishes to express his sincere appreciation to members of the Committee for splendid cooperation on this Ohio River Basin Comprehensive Survey. The Chief of Engineers has designated Colonel Graf as Acting Division Engineer.

SUMMARY - TWELFTH MEETING OF THE COORDINATING COMMITTEE

The Coordinating Committee met on 14-15 February 1968 at Cincinnati, Ohio. Colonel John A. Graf, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Col John A. Graf - Chairman
Commerce & Transportation	Carl Relyea - Alternate
HEW	Gerald W. Ferguson - Alternate
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	Not Represented
Indiana	John E. Mitchell
Kentucky	Jewell Graham

Maryland	Not Represented
New York	F. W. Montanari
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Don Richwine - Alternate
West Virginia	Edgar N. Henry

The Chairman announced that the only change in representation on the Coordinating Committee since the last meeting involves the Commonwealth of Kentucky. Jewell Graham, newly appointed Director of the Division of Water in the Department of Natural Resources replaces Commissioner Matlick as Kentucky's member of the Coordinating Committee.

BUSINESS SESSION

Public health factors in framework planning were discussed in the light of the changed conditions resulting from the transfer of the Federal Water Pollution Control Administration to the Department of the Interior. It is anticipated that future framework studies will probably include an appendix on health aspects. Such an appendix would include (1) epidemiological assessment, (2) disease vector control, and (3) environmental health analysis. The degree to which such Public Health contribution to water resources and related land use studies can be made will depend upon budget allocation. Presently, the Public Health Service is not budgeted to undertake the entire job, and there are doubts as to whether or not the necessary resources will be made available anytime in the near future. A limited objective of review and comment is being followed in the Ohio River Basin study.

A meeting for technical staff review of Appendix K, Development Program Formulation, was held on 7-8 November. Several comments from the Department of Agriculture requiring detailed discussions were taken up at an interagency meeting on 5-6 December. A work group of the Coordinating Committee reviewed written comments at a conference in Cincinnati on 12-13 December. Most items were disposed of by defining specific revisions. For those remaining, the general nature of what should be done was agreed upon. Revision has been in progress since that date. After review of the changes was made, the Coordinating Committee by consensus gave its approval to finalize and publish Appendix K.

An informal draft of the Main Report was presented for consideration of the Committee, and it was recommended that members or their representatives should plan an active role in resolving comments and editing the final field report. To obtain the views of the Committee, the draft was reviewed in detail, section by section. A series of review and editing meetings to finalize the Main Report was agreed upon.

Guidelines for Framework Studies, October 1967, suggests informational meetings to inform the public. It was agreed that any such meeting held

should be a joint effort of the state concerned and the Coordinating Committee. The state would determine where and when the meeting should be held and arrange for needed facilities. Generally, no more than two such meetings would be held in any one state. The Chairman appointed an ad hoc subcommittee on public information and directed it to report at the next meeting.

The 1967 National Assessment was discussed by Reuben J. Johnson, Deputy Director, Water Resources Council. It is in six parts. There are 20 regional chapters, one of which is on the Ohio River Basin. A review draft has been sent out to all of the agencies that had a part in its preparation. By comparison, the Ohio River Region is not a region of water shortage; but it has management problems. Even with the projected advances in technology, this heavily-industrialized region faces more water reuse, greater control of low and high flows, and intensive development of ground water to serve the needs of the future.

MANAGING RESERVOIR STORAGE IN THE OHIO RIVER BASIN

The establishment of a Reservoir Control Center in the Ohio River Division office of the Corps of Engineers to effectively operate and manage existing storage was predicated upon providing a capability for responding to needs and changes. To decide what course of action is best, there must be a capability to evaluate all factors. The concept of a reservoir regulation advisory committee with representation of the states and appropriate Federal agencies was suggested and the following questions were raised:

a. Should a reservoir regulation advisory committee for the Ohio River Basin be established?

b. If so, should the present Coordinating Committee initially act as such?

c. Should some other official represent your state or agency?

d. If so, who?

A consensus that such a committee would be desirable was apparent. It was equally apparent that there is some question as to whether or not the Coordinating Committee should undertake that role. The Chairman appointed an ad hoc committee to recommend a course of action at the next meeting.

CONSERVATION ORGANIZATIONS - OBJECTIVES IN OHIO RIVER BASIN MANAGEMENT

The Sierra Club was represented by James W. Martin, Jr., Conservation Chairman, Ohio Section. He has been an articulate participant in discussions concerning the Red River Gorge in Kentucky and a leader and organizer of Supreme Court Justice Douglas's visit there. He recognized

the need for dams to supply water, control floods, generate electric power and for other purposes. He emphasized, however, that no water resource framework study is complete unless it includes a definitive plan for the preservation of a fair proportion of our most ruggedly beautiful streams. He urged concern and a demonstration of awareness of human needs by greater emphasis upon those factors which contribute to the quality of life.

Robert T. Dennis, formerly Assistant to the Conservation Director, Izaak Walton League of America, spoke as a representative of the Potomac Basin Center. The growing interest of people in their environment, he said, is reflected in public pressure for better environmental planning. Furthermore, the people are determined to have a hand in the planning process. A group of membership organizations in the Potomac Basin joined together in support of an effort called "Citizens Workshops on Potomac Basin Planning." A series of meetings held was designed to bring the planners and their information down to the grassroots, and to initiate meaningful citizen-planner interaction before citizen groups or planners became locked into fixed positions. The Potomac Basin Center evolved from that effort. It exists as a service arm of resource-interested organizations committed to citizen involvement in decisions determining the destiny of the Potomac River Basin and to the citizens' right to full knowledge about the issues.

Gordon K. Zimmerman, Executive Director, spoke as a representative of the National Association of Soil and Water Conservation Districts. His experience in the field of public relations and public information includes service on the staff of the Master of the National Grange, and membership on the President's Citizens Advisory Committee on Recreation and Natural Beauty. There are over 3,000 soil and water conservation districts in the country. Each is a local political subdivision organized by state law. Districts have broad responsibilities to develop long range plans for the conservation of soil and water resources within their boundaries. Some two million land owners are cooperators in one degree or another. NACD is interested in the Ohio River Basin study because it is the first of its type and something of an experiment. This section of the country has a classic arrangement of all the problems that confront us anywhere, including industrialization, urbanization and the economic problems of the Appalachian Region. Water resources development in our country is in the hands of capable men of integrity who are specialists in their respective fields. It is at the subbasin and the watershed level where local people such as those in soil and water conservation districts should be brought into the planning picture.

OBSERVER COMMENTS

Mrs. James Walsh, League of Women Voters, spoke of the importance of citizen involvement in public information and called attention to the efforts and accomplishments of her organization in these fields.

SUMMARY - THIRTEENTH MEETING OF THE COORDINATING COMMITTEE

The thirteenth meeting of the Coordinating Committee was held 24-25 June 1968 at Charleston, West Virginia. Colonel John A. Graf, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Col John A. Graf - Chairman
Commerce & Transportation	Sylvester E. Ridge
HEW	Not Represented
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James R. Webb - Alternate
Indiana	John E. Mitchell
Kentucky	Not Represented
Maryland	Not Represented
New York	Not Represented
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Marshall Goulding - Alternate
Tennessee	Harold V. Miller
Virginia	Not Represented
West Virginia	Edgar N. Henry

The Chairman announced:

There have been no changes in membership of the Committee since the last meeting. Attending for the first time today, however, are James R. Webb of Illinois, alternate for Gene Graves; and Marshall Goulding of Pennsylvania, alternate for Maurice K. Goddard.

Since the last meeting significant progress has been made toward getting the Ohio River Basin Comprehensive Survey in shape for final reproduction and formal field review. The primary purpose of this meeting is to review that progress; to resolve problems or conflicts that remain, if there be any; and to finalize any other matters that must be disposed of by the Committee prior to the reproduction of the Main Report in final form. Of the 14 documents that make up the report of the Ohio River Basin Comprehensive Survey, ten have been reproduced in final form and distributed to members. Appendices A, History; L, Navigation; K, Development Program Formulation; and the Main Report are in draft form. All have been subjected to informal field review.

BUSINESS SESSION

Appendix M, Flood Control, which had been undergoing revision is now 100 percent complete. It has been distributed to Coordinating Committee members.

Appendix L, Navigation has been finalized and is now at the printers. The formal review draft differs somewhat from the previous draft in content

and organization. Changes were made to comply more closely with the framework study guidelines.

Appendix K, Development Program Formulation, is being modified in the light of comments at task force meetings in November and December 1967, letters received subsequently and views expressed at the last meeting of this Committee. Major changes of specific interest include:

Modification of the preface and summary to clarify the framework plan, the development program, and the related lands programs;

Added subsections on alternatives, overall basin program, and scheduling and implementation. In view of concern expressed on the coverage of ground water, the subject is covered in greater detail. Attachment A, the subbasin section, has been edited and improved and subbasin tables have been revised.

As a result of the informal field review of Appendix A, History of the Study, no conflicts or differences of opinion remain to be resolved. The document cannot be finalized until the study has been completed. It is proposed to begin putting it in final form following this meeting.

An interagency field level work group met on 11-12 March to consider the Main Report draft. A work group of the Coordinating Committee met on 1-2 April 1968 to deal with the letter comments received. Detailed editing is in progress. Revised drafts of Sections IX through XIII were subjected to careful review and extensive discussion by the Committee.

A recent meeting of the Economics Committee of the Water Resources Council, held in Washington, D.C., was attended by members from Kentucky, Virginia, Pennsylvania, and New York; as well as federal agency representatives. Much of the discussion centered on the "National Program of Economic Analyses and Projections," a joint study initiated about four years ago by the Office of Business Economics of the Department of Commerce, and Economic Research Service, Department of Agriculture. A comparison with the Projective Economic Study for the Ohio River Basin Comprehensive Survey indicates lower population and labor force projections for 2020. Further changes can be expected when the 1970 census results are available. This demonstrates that planning is a continuing process and that updating must also be continuous.

The PPBS work group of the Water Resources Council, in its continuing effort to coordinate reporting requirements for the 20 water resources regions of the nation, is emphasizing the desirability of a common geographic framework for collection, analysis and presentation of water and related land resource information. A map and description of the proposed subdivisions of the Ohio River Region was furnished for comment by the Committee and a draft response was prepared and distributed for comment. Eight states and four Federal members responded and the Chairman advised the Water Resources Council that the Committee concurred generally

in the delineations proposed, but recommended certain modification of the subregional breakdown. With the modifications recommended, the breakdown is primarily an aggregation of subregions used in the Ohio River Basin Comprehensive Survey. It gives appropriate consideration to physiographic and demographic similarity, existing hydrologic data and facilities for future collection of such data, and to groupings customarily used by the states concerned.

The ad hoc committee created at the eleventh meeting to consider establishment of a reservoir regulation advisory committee reported its deliberations and submitted its recommendation. It concluded that individuals now comprising the Coordinating Committee would generally be the most likely members of a reservoir regulation advisory committee. Since the long-term future of the present Coordinating Committee is uncertain, it was recommended that the advisory committee be established separately. The recommendation was accepted and the ad hoc committee dissolved.

The ad hoc committee on public information established at the eleventh meeting reported on its investigations, and submitted certain recommendations. It had invited proposals from various public relations firms, four of which were considered. All included the production of films which would be adaptable for both TV use and showing before interested groups. All recommended dealing with local and national press. There are actually two issues to be decided. First, do we really want to undertake such a program? Second, where do we get the money? The ad hoc committee recommended that a public information program be undertaken and estimated that the cost would be in the order of $100,000. It was suggested that the following sources of funds be considered:

The Comprehensive Survey budget;

The Corps of Engineers;

The Water Resources Council;

Intergovernmental joint financing by the Federal agencies and states represented on the Coordinating Committee.

By consensus the Coordinating Committee accepted the recommendation that a public information program be undertaken. The Chairman asked the ad hoc committee to remain in existence while he undertook to develop an answer to the question of how such a program might be financed.

WEATHER MODIFICATION

W. Ferguson Hall, Office of Plans and Programs, Environmental Science Services Administration, U.S. Department of Commerce, discussed weather modification. The status of the art was recently reviewed by a special panel of the National Academy of Science which concluded:

"There is increasing but still somewhat ambiguous statistical evidence that precipitation from some types of cloud and storm systems can be modestly increased or redistributed by seeding techniques . . . . The evidence is complex and, in part, contradictory . . . . "

Progress is being made. The technology of precipitation modification and of the tools to carry out and analyse experiments are rapidly increasing. Congress has taken weather modification seriously and is considering legislation to organize the Federal effort and to provide the necessary support.

NEW DEVELOPMENTS IN RESOURCE ADMINISTRATION FOR WEST VIRGINIA

The organization, functions and responsibilities of the West Virginia Department of Natural Resources were discussed by Director T. R. Samsell. From its beginnings in 1909 the Department has evolved to a full-fledged vehicle for the management of natural resources. The five major divisions are: Game and Fish, Forestry, Parks and Recreation, Water Resources, and Reclamation. There is a staff of more than 600 professional employees.

WATER QUALITY MANAGEMENT - A SUBREGIONAL VIEW

Richard F. Thomas, Civil Engineer, spoke on water quality management problems and developments from the viewpoint of the Miami Conservancy District, which was originally formed to deal with regional problems of flooding. By 1953, water quality and water supply had become matters of general concern; and the District approached them in a similar matter. Interest in regional solution of water quality problems was further stimulated by the Federal Water Quality Act of 1965. The goal of the Miami Conservancy District is to insure that specific improvements of an individual and regional nature will offer the greatest chance of success at the least cost. An Official Plan has been adopted by the directors of the District and approved by the Conservancy Court. This is the beginning of a necessary regional management activity which is to be carried on either as an entirely local effort, or as a joint effort with State, Federal and local participation.

SUMMARY - FOURTEENTH MEETING OF THE COORDINATING COMMITTEE

The fourteenth meeting of the Coordinating Committee was held 4-5 December 1968 at Pittsburgh, Pennsylvania. Brigadier General Willard Roper, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Brig Gen Willard Roper - Chairman
Commerce & Transportation	Vernon T. Houghton, Jr. - Alternate
HEW	Gerald W. Ferguson - Alternate
Interior	Fred Wampler
FPC	Paul H. Shore - Alternate

Illinois	James R. Webb - Alternate
Indiana	John E. Mitchell
Kentucky	Joseph L. Tucker - Alternate
Maryland	Albert R. Miller, Jr.
New York	John A. Finck, Jr. - Alternate
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Not Represented
West Virginia	Edgar N. Henry

The Chairman expressed his pleasure at returning to the Ohio River Division after his tour of duty in Vietnam, and announced:

Dr. Albert R. Miller, Jr., Chief of the Planning and Research Section of the State Planning Department, has replaced Mr. O'Donnell as Maryland's representative on the Committee.

Mr. Houghton of the Weather Bureau, Pittsburgh, in his first appearance, represents Sylvester Ridge of Commerce and Transportation.

The principal purposes at this meeting are to briefly review the appendices distributed since the thirteenth meeting, and to thoroughly review and discuss the Main Report and comments concerning it.

BUSINESS SESSION

Appendix L, Navigation, was completed and mailed to members in September 1968. In order to familiarize all concerned with its content and the revisions made, it was reviewed section by section.

Appendix K, Development Program Formulation, distributed for formal field review in October 1968, was reviewed in detail, section by section.

The formal field review draft of the Main Report was transmitted to members by letter dated 11 October 1968. This completed the submission of documents for field level review as contemplated in Water Resources Council guidelines. Certain pages, revision of which was found to be necessary, were transmitted to members of the Committee on 1 November. The 45-day field review period having been completed, the Chairman invited the comments of members of the Committee. The response was as follows:

Agriculture. Letter comment was read into the records.

Commerce & Transportation. No Comment.

HEW. All concerned should be commended.

Interior. A letter has been submitted. With certain qualifications, the Main Report draft is indorsed.

FPC. A letter of indorsement will be forthcoming.

Illinois. No comment.

Indiana. A letter has been submitted. With minor qualifications, Indiana concurs.

Kentucky. No comment.

Maryland. A letter of concurrence has been submitted.

New York. A letter has been submitted. New York concurs with certain qualifications.

North Carolina. A letter of concurrence has been submitted.

Ohio. A letter has been submitted. In general Ohio concurs, and believes periodic updating will be required.

Pennsylvania. Extensive comments have been submitted by letter. Section XIII, Recommendations should be strengthened.

Tennessee. A letter of indorsement with a few specific suggestions for correction or clarification has been submitted.

Virginia. Not present.

West Virginia. Participants should be commended. A letter will be forwarded at a later date.

Informal review comments of the Water Resources Council's Planning Committee were presented by Reuben J. Johnson. The Committee hopes that these comments, intended to be constructive, will help to bring out the wealth of material contained in the appendices, so as to make the Main Report more representative of the framework study as a whole and the tremendous amount of work that has been done. Specific items were:

a. The Main Report cover and title page should be revised to indicate that this document is the responsibility of the Coordinating Committee.

b. The need for changes in both Federal and state law should be examined.

c. There is not enough emphasis on non-structural measures.

d. A discussion of the adequacy of state laws dealing with flood plain management should be included.

e. The framework plan should be broadened to include Federal, state and local programs.

f. The investment required to achieve and maintain secondary treatment should be indicated.

g. Water rights under state laws in relation to the protection of augmented flows against diversion should be considered.

h. Acid mine drainage is not adequately considered.

i. The order of priority for further comprehensive studies should be recommended.

j. The Main Report is written in such general terms that there seems to be duplication between sections.

k. Appropriate reference should be made to the implications of flood plain insurance under the National Flood Insurance Act of 1968.

l. Section IX, Development Program needs amplification. Sections X, XI, XII and XIII should be more closely interrelated to indicate the urgency of problems and priority of programs, and to identify the subbasin areas having the most critical problems.

There was agreement that fundamental issues had been raised by the Water Resources Council's Planning Committee. Some of these had previously been considered by the Coordinating Committee and rejected or modified. The Chairman suggested the desirability of visiting the Planning Committee in Washington to seek a meeting of minds as to the extent of revision which could appropriately be undertaken. The Committee concurred.

Mr. G. H. McDaniel, American Electric Power Service Corporation, who was in attendance for the first time, charged that the study was being conducted in an atmosphere of secrecy and that he had not had sufficient opportunity for advanced consideration of the report being reviewed. He was advised that all meetings of the Committee had been open to the public and that all elements of the study had been available for examination upon request to participating states or Federal agencies.

As to the public information program, limited progress was reported. A revised set of slides was exhibited.

OPTIMUM STATE PARTICIPATION

North Carolina's letter of comment on the Main Report expressed deep concern with the subject of federal-state cooperation in water resources planning. Ten or more type I, II, III or IV studies are pending or in progress there. The expenditure of effort in participating, and the time requirements for thoughtful review, are beyond the capacity of available staff. These matters should receive consideration and the state water agency should be nurtured as an information center and coordinating influence.

On state participation, Mr. Miller of Tennessee said a team effort is necessary to approach an optimum condition. The role and responsibility of the states stems from the fact that they are closer to their people and more broadly concerned with resource development within their boundaries than can be any Federal agency or group of agencies. The states can and should (1) assume leadership in flood plain management matters, (2) assume a positive role in reserving potential industrial land, and (3) fully perform the functions of pollution control within their borders. It is impossible for the states to respond to all cost-sharing proposals offered. Tennessee recently found that there are 83 Federal programs for which laws or guidelines required a "state plan." Most include standards for state compliance which are by no means identical. As a practical matter, state planning is substantially impeded and undermined by the conflicting demands of a wide variety of Federal programs. A team effort, including optimum state participation, must concern itself with the totality of the impact of all programs and decisions within the basin.

ALTERNATIVE INSTITUTIONAL ARRANGEMENTS

In the evolution of water resources planning, it has become increasingly evident that suitable institutional arrangements are needed, not only for planning, but for the management and operation of river basin systems. Three different types of coordinating mechanisms have been used in the preparation of framework studies. These are:

a. Ad hoc coordinating committees.

b. River basin interagency committees.

c. River basin commission established under Title II of the Water Resources Planning Act.

Reuben J. Johnson discussed a report on institutional arrangements released by the Water Resources Council in August 1967. The alternative types of institutional arrangements evaluated are (1) interstate compact;, (2) Federal-interstate compact, (3) title II river basin commission, (4) basin interagency committee, (5) regional Federal-state commission, (6) intra-state special district, (7) federal regional agency, and (8) single Federal administrator. Of the several types discussed, the one which the Water Resources Council believes most suitable for updating and implementing a framework study is the Title II river basin commission.

LEGISLATION AND APPROPRIATIONS

The Flood Control and Rivers and Harbor Act of 1968 included authorization for a local protection project at Louisville, Kentucky; two projects in the Licking River, Ohio; and several reservoir and local protection projects in the Wabash Basin. It also authorized action to prevent or mitigate shore damage attributable to Federal navigation works; studies of streambeds and erosion; and the acquisition of land

for resettlement of people displaced by construction work, where state or other non-Federal agencies are unable to acquire such lands. Appropriations for fiscal year 1969, together with carryover money, will support continuation of about 40 projects which the Corps of Engineers now has under construction in the Ohio River Division. Congressional action directing a substantial reduction of expenditures, however, will require adjustment of the program.

The budget situation for watershed construction has improved so that the signing of project agreements with local sponsors, and the awarding of contracts for construction can proceed. An amendment to the Watershed Protection and Flood Prevention Act contained in PL 90-361 permits the Secretary of Agriculture to contract for the construction of works of improvement upon the request of local sponsoring organizations. Prior to the passage of this amendment, local sponsors were required to do the contracting.

An act to establish a national wild and scenic rivers system was passed by the Congress as Public Law 90-542. An amendment to the Land and Water Conservation Fund Act makes money from offshore mineral receipts available to insure $200,000,000 annually for the next five years.

The Congress established the National Water Commission and the President has named its members.

OHIO RIVER BASIN LAND AND WATER USE SEMINAR

The League of Women Voters Land and Water Use Seminar for the Ohio River Basin, held 19-21 November 1968, was reported by Mrs. Robert Duffy. This was the eleventh such seminar that has been sponsored by the Education Fund of the League since 1954. Financial support came first from HUD, and more recently from Interior. League experience has indicated a growing need for informed, competent, citizen leadership. Local and state governments need the support of an informed public. In preparing for the Ohio Basin seminar, recommendations were sought from more than 300 organizations. Some 95 participants were nominated, of which 40 were selected. The program included a keynote talk by Governor Ned Breathitt of Kentucky, as well as participation by General Roper, Mr. Caulfield, Dr. Ed Cleary, the Natural Resources Directors from four states, and various other distinguished representatives of educational institutions, Federal agencies, state and local government and private organizations. Participants returned to their areas and organizations better informed and better able to support constructive action.

SUMMARY - FIFTEENTH MEETING OF THE COORDINATING COMMITTEE

The fifteenth meeting of the Coordinating Committee was held 21-22 May 1969 at Louisville, Kentucky. Brigadier General Willard Roper, Chairman, presided. Attendance of regular members and alternates was as follows:

Agriculture	Thomas B. Evans
Army	Brig Gen Willard Roper - Chairman
Commerce & Transportation	Sylvester E. Ridge
HEW	John D. Faulkner
Interior	Fred Wampler
FPC	John H. Spellman
Illinois	James R. Webb - Alternate
Indiana	William J. Andrews - Alternate
Kentucky	Jewell Graham
Maryland	Not Represented
New York	F. W. Montanari
North Carolina	Not Represented
Ohio	C. T. Foust - Alternate
Pennsylvania	Alan J. Sommerville - Alternate
Tennessee	Harold V. Miller
Virginia	Not Represented
West Virginia	Edgar N. Henry

The Chairman announced:

The new member for Indiana is Perley Provost, Jr., who has succeeded John Mitchell as Director of the Department of Natural Resources.

A meeting was held on 9 January 1969 with the Planning Committee of the Water Resources Council in Washington. A meeting of minds was achieved as to the intent of the Planning Committee's review comments on the Main Report.

A work group of the Coordinating Committee met in Cincinnati on 11 February and a revision task force was established. On 22 April, the work group met again and reviewed the work done by the task force.

The primary purpose of this meeting is for the Coordinating Committee to consider and, hopefully, to approve the revised draft of the Main Report.

STREAMBANK EROSION STUDY

Section 120 of the Rivers and Harbors Act of 1968 authorized and directed the Secretary of the Army, acting through the Chief of Engineers, to undertake streambank erosion studies. A report must be submitted to Congress within one year of the date of the act. The Ohio River Basin component of the streambank erosion study was done by the Corps of Engineers in cooperation with the Soil Conservation Service, other Federal agencies and the states concerned. While streambank erosion is not a major problem in the Ohio Region, it is serious in some areas. Detailed studies are needed at specific locations to determine what action would be most appropriate. The Chief of Engineers will consolidate the reports of all divisions. The single report rendered to Congress will undoubtedly be available to states and other interests.

BUSINESS SESSION

The revision task force rendered its report. Membership included representation from the States of Indiana and Ohio, as well as from the Department of Interior, the Department of Agriculture and the Corps of Engineers. It was instructed to incorporate to the extent possible all comments from the field review, and to make the report comply with the informal comments of the Planning Committee of the Water Resources Council. This was accomplished by bringing forward into the body of the Main Report that material from the thirteen subject matter appendices needed to make the Main Report stand on its own.

The revised draft of the Main Report was then considered section by section. Specific recommendations for minor changes and corrections were received and acted upon. Substantial improvement over the previous draft was acknowledged. However, New York's representative expressed reservations about three sections - Summary, Conclusions and Recommendations. After discussion, it was the consensus of the Committee that agreement had been reached as to substance; but that the sections on Conclusions and Recommendations should be extensively edited and rewritten without substantive change. This was to be done in a minimum of time with revised sections furnished to members. If any reservations remain, they are to be stated in the field review letter of comments which is to be transmitted with the report.

TRANSMITTAL AND RELEASE PROCEDURES

The procedures for submission and review of type I studies are given in Part IV, Guidelines for Framework Studies. Reuben J. Johnson pointed out that these were supplemented by memoranda of 17 May 1967, 4 March 1968, and 22 August 1968. For the Ohio Basin Study, field review having been completed, letters of endorsement with or without qualifications should now be provided by each of the participants, and four copies of the report including all appendices forwarded to the Water Resources Council. Concurrently, each participating Federal agency should submit the required number of copies to its Washington office. Upon receipt of the report the Council will initiate its review, either through the Planning Committee or by a task force appointed for the purpose. Upon completion, the Council will prepare its report and furnish copies to the governors of participating states or their representatives, and to Federal agencies concerned. Recipients will have 90 days to comment on the Water Resources Council's findings. The entire report with all comments will then be forwarded to the Bureau of the Budget, after which it will be submitted to the President with a recommendation that it be transmitted to the Congress. At such time as the report is forwarded to the Water Resources Council it will be available for release to the general public, and 400 to 600 copies should be prepared for that purpose. In addition, it is anticipated that a summary brochure of 30 to 50 pages will be available for broader distribution. Some 5,000 copies may be needed.

REPORT OF THE STATES

On 4 December 1968 a number of the participating states met to discuss possible future institutional arrangements for the Ohio River Basin. A second meeting was held on 27 March 1969. C. H. McConnell of Pennsylvania reported that the Water Resources Council publication "Alternative Institutional Arrangements for Managing River Basin Operations" had been reviewed. It was the view of the states that serious consideration should now be given to future institutional arrangements in order to implement and update, as necessary, the recommendations of the Ohio River Basin Comprehensive Survey; and that the existing Coordinating Committee should continue to operate until such time as the study and its review by higher authority is completed. Secondly, an official canvass should be undertaken by the states themselves to establish their position with regard to a Title II river basin commission. If a sufficient number agree, further contact with the Water Resources Council with regard to planning and scheduling for such a commission would be in order. While consensus has not been achieved, there appears to be growing support among the states for the ultimate establishment of a river basin commission.

Reference previous discussion about informing the public, the Chairman indicated that no method has yet been found for financing a motion picture. A 30 to 50 page brochure will be developed for release when the report is transmitted to higher authorities.

INTERGOVERNMENTAL COOPERATION ACT

Philip Glick, Water Resources Council, discussed the Intergovernmental Cooperation Act of 1968 (PL 90-577) in its relationship to the historical development within the United States of a tradition and practice of collaboration among Federal, state and local governments. Earlier devices created to promote such cooperation have included (1) interstate compacts, (2) Federal grants-in-aid, (3) the Tennessee Valley Authority, a Federal-regional agency, (4) soil conservation districts for rural areas and public housing authorities for urban areas, (5) the Appalachian Regional Commissions (and others), (6) interagency committees, coordinating committees and Title II river basin commissions for water resources planning and development. Proposals in the current administration include the Heller-Pechman Plan for block grants to states and the establishment of the Office of Intergovernmental Relations.

The Intergovernmental Cooperation Act of 1968 contains four programs:

It provides for improving the administration of Federal grants-in-aid.

Title III authorizes Federal departments or agencies to render technical services and assistance to state and local governments upon request, on a reimbursable basis.

Title IV provides for coordination of Federal land purchases and disposal so as to promote rather than disrupt local zoning and urban land development programs.

Being aware that many of the activities of the Federal departments have an important impact on economic development, the Congress in Title IV of the act instructed the President to issue rules and regulations to bring about Federal, state and local consultation on how current and future Federal programs can best promote and least interfere with the economic development efforts of states and local communities. Regulations have been drafted and sent out to the state and local governments for review.

THE NATIONAL WATER COMMISSION

Howard L. Cook, Deputy Director, reviewed the legislative history and current status of this new agency. Legislation to establish the Commission was originally proposed by the Bureau of the Budget in May 1965. The legislation was enacted in September 1968 as Public Law 90-515. It provides for a membership of seven citizens not holding any other Federal position. Duties of the Commission are (1) to predict the water needs and problems of the future, (2) to appraise present water programs in the light of these predictions, and (3) to advise the Congress and the President on what should be done to insure that water resources are utilized most effectively for the benefit of future generations. The Commission's approach will be as follows:

First, undertake a series of studies as a basis for making long range projections.

Second, make an analysis of present water laws and legal problems.

Third, appraise the present water programs and policies of the United States.

Fourth, give attention to a proper division of responsibility between the Federal, state and local governments and private enterprise.

Fifth, develop recommendations on organizational and institutional issues.

Sixth, appraise present techniques for planning and evaluating water resources programs.

Seventh, develop ways and means for increasing public participation in the formulation of water policy.

There was no intent to duplicate the responsibilities of the Water Resources Council. The Council has the job of coordinating going programs; - the Commission has no program responsibilities. The Council is a continuing body; - the Commission is a temporary body that will go out of business when its findings are reported.

WATER RESOURCES COUNCIL
WASHINGTON, D. C.

GUIDELINES

FOR

FRAMEWORK STUDIES

OCTOBER 1967

Published by: Water Resources Council
1025 Vermont Avenue, Northwest - Washington, D. C. 20005

Attachment 1

THE WATER RESOURCES COUNCIL

It is the function of the Council to effectuate the policy of the United States, as stated in the Water Resources Planning Act approved July 22, 1965 (P. L. 89-80), to encourage the conservation, development and use of water and related land resources of the United States. This is to be done on a comprehensive and coordinated basis by the Federal Government, States, localities and private enterprise with the cooperation of all affected Federal agencies, States, local governments, individuals, corporations, business enterprises and others concerned.

The officers and members of the Council are:

Stewart L. Udall, Secretary of the Interior, Chairman
Orville L. Freeman, Secretary of Agriculture
Stanley R. Resor, Secretary of the Army
John W. Gardner, Secretary of Health, Education and Welfare
Alan S. Boyd, Secretary of Transportation
Lee C. White, Chairman, Federal Power Commission
Alexander B. Trowbridge, Secretary of Commerce, Associate Member
Robert C. Weaver, Secretary of Housing and Urban Developmert, Associate Member
Charles L. Schultze, Director, Bureau of the Budget, Observer

Henry P. Caulfield, Jr., Executive Director

1025 Vermont Avenue, N. W.
Suite 900
Washington, D. C. 20005

GUIDELINES FOR FRAMEWORK STUDIES

TABLE OF CONTENTS

		Page No.
Foreword		1
I.	General	3
II.	Water Resources Council Responsibilities and Functions	6
	Status Report - Comprehensive Studies	9
III.	Content and Form of Framework Reports	11
	General	11
	Content	11
	Main Report Outline	12
	Appendices	14
	Form of Report and Appendices	15
IV.	Submission and Review Procedures for Framework Reports	16
V.	Administration	18
	Purpose	18
	Study Authorizations	18
	Participation by Agencies	18
	Coordination of Planning	19
	Coordination of Budgets	21
	Summary Justification for Entire Study	25
	Agency Justification	26
	Coordinated Budget Form - Sample	27

TABLE OF CONTENTS (CONTINUED)

		Page No.
	Planning Procedures	28
	Outline of Plan of Study	33
	Reporting Procedures	36
	Public Information Efforts	37
VI.	Related Land	38
	Definitions and Examples	38
VII.	State Participation	40

FOREWORD

The guidelines which follow are developed to obtain a reasonable degree of uniformity and consistency in the management and procedures followed in the regional framework studies that make up a major segment of the present nationwide comprehensive basin study program. They will serve as a guide to the Member Agencies of the Water Resources Council (WRC) and as suggestions to States in completing this study program within the coordinating means provided.

These guidelines are in conformance with the provisions contemplated for framework studies in the letter of December 12, 1963, to the Director, Bureau of the Budget, from the ad hoc Water Resources Council, which formulated the Coordinated Planning Programs. That letter stated:

> "The framework or Type 1 studies we would develop under the foregoing proposal are essentially the same as those defined by our November 1962 letter; that is, we contemplate comprehensive plans which would provide 'economic projections of economic development, translation of such projections into demands for water and related land resource uses, hydrologic projections of water availability both as to quantity and quality, and projections of related land resource availability, so as to outline the characteristics of projected water and related land resources problems and the general approaches that appear appropriate for their solution.' Such framework studies would provide general guides to future water resource development. In addition to indicating which regions, or sub-basins within them have water problems calling for prompt detailed planning efforts as well as those where no such problems are current or looming, such studies will provide a substantial contribution of fact and analysis to subsequent detailed plan formulation."

These guidelines are an updating, with a minimum of revision, of guidelines previously issued to Member Agencies. They supersede all previously issued guidelines for framework studies. Any comments, inquiries, or suggestions which anyone considers to be pertinent would be helpful in further work on or additions to these guidelines. Official communications from Member Agencies in this connection should be submitted to headquarters offices of each Department, agency, or bureau for transmittal to WRC. All other comments, inquiries, or suggestions should be sent directly to WRC.

Henry P. Caulfield, Jr.
Executive Director

PART I

GENERAL

1. The basic objective in the formulation of framework plans is to provide a broad guide to the best use, or combination of uses, of water and related land resources of a region to meet foreseeable short- and long-term needs. In studies to achieve this basic objective, consideration will be given to (a) the timely development and management of these resources as essential aids to the economic development and growth of each region; (b) the preservation of resources, in appropriate instances, to insure that they will be available for their best use as needed; and (c) the well-being of all of the people as the overriding determinant in such planning.

2. Framework studies will be preliminary or reconnaissance-type investigations intended to (a) provide broad-scaled analyses of water and related land resource problems; and (b) furnish general appraisals of the probable nature, extent, and timing of measures for their solutions.

3. Framework studies will be concerned only with the intraregional water and related land resources and their uses except that where natural interregional hydrologic connections are involved, as in the case of the Missouri Basin and the lower Mississippi River, the interregional aspects may be considered.

4. Framework studies will consider all geographic areas within the study region and all purposes served by the conservation, development, and use of water and related land resources. The details of framework studies will be limited to those necessary to meet the requirements of item 2 above.

5. To meet the requirements of scope and detail established in item 4 above, framework plans will be based on initial planning steps using general relations, reasoned approximations, available data, and the judgment of experienced planners. While potential sites may be identified, project formulation studies will not be undertaken at any stage of framework planning. It is not contemplated that inventories of all potential sites will be made. New procedures and concepts, as well as the ingenuity of the planners, will be required.

6. The economic projections for framework studies will be for the region as a whole and for appropriate subregions. The national pattern of indices and projections to establish the economic relationships between regions is being accomplished at departmental level.

7. In framework studies, the study area will be broken into subregions defined by hydrologically consistent areas, such as principal (5,000 to 50,000 square miles, or more) subbasins; and major problem areas, such as major (for example, Indianapolis) metropolitan area or a major (several tens-of-thousand square miles) water-deficient area. It is recognized that the definition of these areas must be tailored in size and number to the specific study region, but it is intended that the number of such areas be kept to a practical minimum consistent with the basic objective of the framework study (item 2) and the anticipated needs for future more detailed subbasin studies.

8. The needs for the goods and services relevant to water and related land resource development will be expressed in terms of gross and net demands for such goods and services in each subregion (item 7). The net demands to be met by additional resource development will reflect adjustments for unused capacities of existing resources and/or competitive means of satisfying part or all of the gross demands. These net demands will be shown for current conditions of development and for 1980, 2000, and 2020.

9. Framework studies will establish the water resource relationship between logical subregions of the study area. Interregional water relationships will not be investigated in framework studies except as noted in item 3.

10. Water problems along downstream reaches of major rivers, such as the Ohio and the Missouri, usually are susceptible to broad resolution only after consideration of control of high and low flows in tributary areas. Accordingly, a framework study will require that the main stem problems be considered in connection with intra-subbasin problems.

11. Framework programs will be defined in terms of (a) gross storage requirements, with time and general geographic distributions; (b) local protection works, with the indicated number of localities involved in each subregion; (c) general reaches (20 to 50 miles) where increased low flows and/or decreased pollution loads are indicated for water quality improvements at target dates in the future; (d) management and utilization of "related land" by acres, or square miles involved, with time and geographic patterns indicated; (e) general reaches where channel improvements are indicated; (f) man-days of water-based recreation, including hunting and fishing, to be provided with time and general geographic patterns; and (g) similar general terms for other functions of water and related lands.

12. The practicality of broad components of the frameworks and physical and hydrologic factors pertinent thereto will be established through general reviews and assessments of water supplies, storage potentials, related land resources, local protection possibilities, and other physical factors; and through general appraisals of the reasonableness and effectiveness of potential programs of water reclamation and reuse, flood plain zoning, and other similar measures.

13. General cost estimates for broad components of the framework plan will be of reconnaissance quality and detail, based primarily on experience in the study region.

14. In developing the framework programs (item 11) the intraregional potentials for changes in resource uses, reallocation of existing storage, and similar matters will be reviewed in general terms.

15. Framework studies will project, for 1980, 2000, and 2020, land use patterns to the extent necessary to appraise in general terms the needs for water resource development, and the effects of land use on projected water resources availability, management, and development.

16. Framework studies will reach conclusions as to the urgency of water and related land problems in the subregions, and recommend priorities for more detailed studies in the near future (10 to 15 years) leading to the authorization of an action program for the development of the water and related land resources.

PART II

WATER RESOURCES COUNCIL RESPONSIBILITIES AND FUNCTIONS

1. Purposes of These Part II Guidelines

These guidelines:

a. Define the responsibilities and functions of the Water Resources Council in the coordination and accomplishment of the nationwide program of comprehensive basin studies of framework (type 1) scope;

b. Provide for a Plan of Study; and

c. Require periodic reports on work progress.

2. Water Resources Council (WRC) Operations

A function of the WRC is to assure that participation of the Member Agencies in the Comprehensive Basin Planning Program is accomplished in an orderly, efficient, and coordinated manner. It meets regularly to discuss and act on matters of mutual interest. The Council has established various committees, task forces, and work groups to assist in accomplishing its mission. The WRC operating organization is illustrated in Attachment A to this Part. The Planning Committee, which is directly concerned with the comprehensive planning program, follows a pattern of regular meetings with open and informal discussion of any and all problems concerning the study program. The committee recommends priority of studies and interdepartmental policies, programs, and procedures to WRC, as needed, to assure that the framework studies are being administered uniformly and that study progress is expeditious, economic, and fully coordinated.

3. Departmental Operations

Representatives of each of the Council Members participate in the work of the WRC to coordinate agency efforts and give interagency impetus and direction to the program. Each Member Agency will transmit joint policy, program, and procedural statements to its concerned field offices; will promulgate, as needed, separate instructions to carry out its part of the studies; will provide the funds and technical guidance for its participation in accordance with the coordinated budget tables; and each will also take responsibility for its activities in the conduct of this program.

4. Field Level Coordination

Each agency field office has a primary responsibility to its agency. This responsibility requires coordinated planning with other bureaus and agencies in accordance with interagency agreements and guidance on this program. The intent of coordination is to improve scope, efficiency, and acceptability of this effort.

5. Field Headquarter Relationships

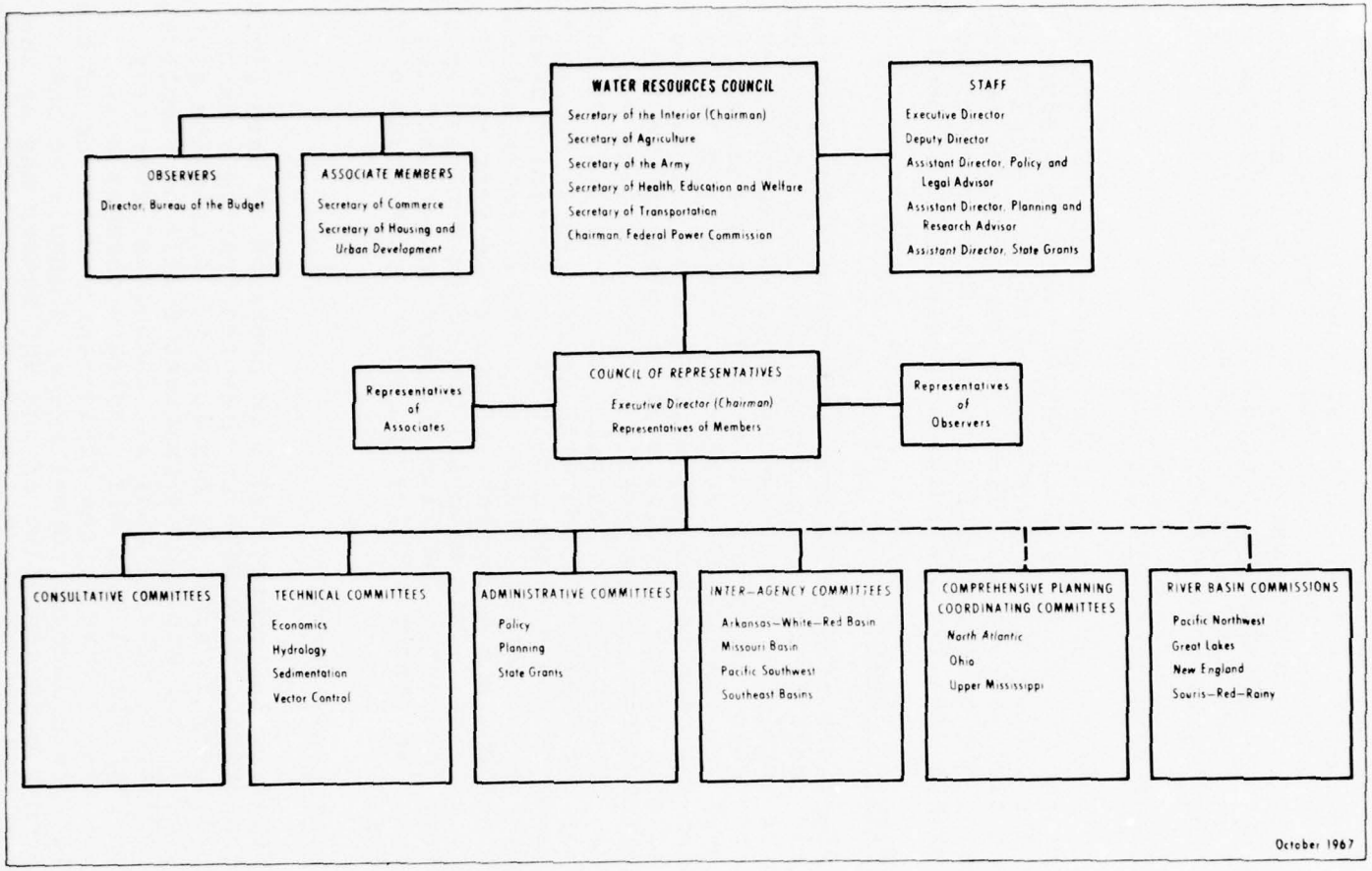
Information and instructions agreed upon by the WRC will be transmitted in a parallel fashion by each Member Agency to its field offices involved. Also, the results of coordinated field effort will flow from the official representatives of the Member Agencies through their respective channels unless specific instructions indicate other handling.

6. Plan of Study

Plans for studies in this program will be prepared by the field coordination group during the first study year. They will be submitted by the agency field representatives of the coordination group through normal agency channels to Council level for "in-house" review and comment and by the coordination chairman to the Executive Director, WRC. The comments of each of the agencies will be submitted to the WRC for coordination and preparation of WRC comments for transmittal. through agency channels, to the field. Periodic revisions of the Plans of Study will be handled in the same manner. Instructions have been distributed enjoining study participants to use network analysis in the planning scheduling, coordination, and management of costs and progress of interagency efforts. This material should be included in the Plan of Study document. The Plan of Study should include, also, a tentative report outline and a work plan related to that outline.

7. Status of Reports

Brief status reports will be prepared by each field coordination group. They will be prepared quarterly as of October 1, January 1, April 1, and July 1. A complete status report in the format shown on Attachment B will be submitted as of the effective date of July 1. Subsequent quarterly reports for that fiscal year will indicate changes only. They will be transmitted by the field representatives of the coordination group through normal agency channels to the official agency representative of the WRC Member and by the coordination chairman to the Executive Director, WRC, by the end of the previously named months.


WATER RESOURCES COUNCIL
Secretary of the Interior (Chairman)
Secretary of Agriculture
Secretary of the Army
Secretary of Health, Education and Welfare
Secretary of Transportation
Chairman, Federal Power Commission
STAFF
Executive Director
Deputy Director
Assistant Director, Policy and Legal Advisor
Assistant Director, Planning and Research Advisor
Assistant Director, State Grants
OBSERVERS
Director, Bureau of the Budget
ASSOCIATE MEMBERS
Secretary of Commerce
Secretary of Housing and Urban Development
COUNCIL OF REPRESENTATIVES
Executive Director (Chairman)
Representatives of Members
Representatives of Associates
Representatives of Observers
CONSULTATIVE COMMITTEES
TECHNICAL COMMITTEES
Economics
Hydrology
Sedimentation
Vector Control
ADMINISTRATIVE COMMITTEES
Policy
Planning
State Grants
INTER-AGENCY COMMITTEES
Arkansas-White-Red Basin
Missouri Basin
Pacific Southwest
Southeast Basins
COMPREHENSIVE PLANNING COORDINATING COMMITTEES
North Atlantic
Ohio
Upper Mississippi
RIVER BASIN COMMISSIONS
Pacific Northwest
Great Lakes
New England
Souris-Red-Rainy
October 1967

PART II ATTACHMENT B

STATUS REPORT - COMPREHENSIVE STUDIES

Name of Study:
Type:

Effective Date:
Fiscal Year:
Quarter:

1. Authorization

Identify, including citation of the applicable Congressional authorities and special authorities and limitations of scope and cost.

2. Public Contacts

State place and date of public hearings and meetings; Congressional and principal local representation; nature of requests, and opposition and support therefor; and offers of local cooperation.

3. Interagency Coordination

Identify the responsible cooperating States and agencies, and briefly describe any difficulties on coordination. Show interagency organization for study (committees, task forces, etc.), with membership (individual and agency) and a statement of their meetings and accomplishments for the quarter.

4. Problems and Solutions

Present specific data to permit an understanding of outstanding or prospective problems and proposals under consideration. Clear, definitive, but concise statements are desired on such problems as proposals under consideration, technical adequacy of available data, studies and plans, degree of refinement of studies and interagency or public coordination needed; Federal responsibility; effects of budgetary constraints; and special planning problems requiring assistance beyond the means of the planning group (WRC, etc.).

5. Progress to Date on Field and Office Studies

State briefly the progress to date on field and office studies, such as reconnaissance surveys, studies, hydrologic data, etc. Attach a network or activity schedule of major activities to the first complete report each fiscal year (effective date, July 1). Each quarter identify and comment briefly on scheduled versus actual progress and reasons for differences for State and other agency tasks relating comments to network analysis. For this purpose, a simplified master network supported as necessary by more detailed networks relating to major subactivities with departmental responsibilities identified may be useful.

6. Proposed Schedule of Operations

In the July 1 report each fiscal year, show schedule of major activities for the year, for the first quarter, and for completion of the studies. In the supplemental quarterly reports, state the schedule for the ensuing quarter; relate to network; and state meeting dates for the next 4 months and whether WRC representation is desired.

7. Financial Progress

In the July 1 report indicate financial progress relating actual to programmed expenditures by agency for the previous fiscal year. Relate to activity schedule as practicable.

8. Presently Approved Schedule of Submission of Major Study Elements by States and Agencies and Working Groups

	Dates of Submission	
	Scheduled	Actual

Enter the approved schedule of submission and any expected necessary revision thereof, and the actual submission date, where applicable, for any separable portions of the report as well as the entire report requiring review.

9. Other Matters

State briefly any matter considered necessary to an understanding of the status and funding of the investigation. This paragraph should be used to complete adequate reporting on relevant matters not otherwise covered. Include identification of basin water problems, the solutions of which are so urgent as to require action prior to the completion of the comprehensive report.

PART III

CONTENT AND FORM OF FRAMEWORK REPORTS

1. General Considerations

a. The content of reports of framework scope and their supporting appendices or attachments should be generally consistent with these Guidelines, with adjustments as necessary, to fit unique study objectives, specific conditions encountered in the region, special study arrangements, or other conditions.

b. These Guidelines should be given full consideration in the preparation of the "Plan of Study."

c. Tentative coordinated outlines of the report and appendices (or attachments) prepared as features of the Plan of Study will be subject to modifications, deletions, and additions as the study progresses and the writeups and final editing are accomplished.

d. The outline of a specific report and supporting appendices (or attachments) prepared in accordance with these Guidelines will indicate the end product of the study, and will be used to support work assignments, schedules, funding needs of study participants, and periodic progress reports.

e. For purposes of uniformity in the nationwide program of comprehensive basin studies, the content and form of all reports of framework scope will conform generally to these Guidelines regardless of the nature of coordinating or management mechanism used for any specific investigation.

2. Content of Reports of Framework (Type 1) Scope

a. The main report will be a concise summary of information, data, and findings reported in appendices or attachments.

b. The main report will be prepared in a consistent, well-written, readily understandable style and will be kept free of material not essential to an understanding of the subject and findings of the study.

c. An appendix or attachment should be prepared on each specific subinvestigation or area of interest pursued as a pertinent feature of the overall study to present a complete and accurate record of the data, rationale, procedures, and findings of the substudy.

d. Data and material not directly pertinent to the basic objectives of framework-scope investigations or which are readily available in published documents should be omitted from the main report and appendices or attachments. Appropriate references should be made to sources of data used.

e. The main report will be composed of a number of parts or chapters covering subjects generally as indicated below in a typical report outline and will reflect findings set forth in detail in the appendices or attachments on specific subjects such as those indicated below.

3. Typical Main Report Outline

a. Summary

A 1- or 2-page summary of the main report.

b. Table of Contents

A simplified but adequate list indicating all significant items of content.

c. Introduction

A statement of study authorizations, objectives, constraints, assumptions, study time, data used, participating agencies, and general procedures followed.

d. Description of the Region

A brief, concise description of the geographic, physical, and social environs of the region.

e. Regional Economy

A description of the economic base of the region with past, present, and future trends of economic indices and relationships of the region to the national economy.

f. Current Status of Resource Development, Use, and Planning

A description of present development and use; current planning pertaining to the water and related land resources of the region; and regional interests in development and use of the water and related land resources.

g. Water and Related Land Resources Availability

A report on the present and projected availability of water and related land resources.

h. Problems and Needs

The magnitude and nature of present and projected problems and needs related to water resource development and use. Consider all problems the solution of which would place significant demands on the water and related land resources, including water supplies, flood control, irrigation, land stabilization, water quality, watershed protection and management, navigation, outdoor recreation, fish and wildlife, preservation of green spaces and aesthetic values, and others.

i. Development Program

General approach to the solution of the problems, including all practical alternative approaches.

j. Discussion

Discuss general magnitude of the costs of the development program and practical alternative measures for the short- and long-term development and use of the water and related land resources and give general evaluations thereof.

k. Implementation

Implementation of the Development Program, including the indicated general levels of Federal and non-Federal funding, the need for new or modified organization at State or local levels for implementing the program, probable timing of development, and the nature and extent of further studies leading to an action program.

l. Conclusions

A clear, concise statement of conclusions reached.

m. Recommendations

The recommended program and provisions for its modification and updating.

4. Appendices

a. The nature and extent of subinvestigations and records to be reported in separate appendices (or attachments) will vary, depending on specific conditions and factors encountered in the region and in the course of the overall study. Typical subjects that may be covered in separate appendices are:

(1) History of study;

(2) Economic base and structure of the region - present and future;

(3) Climate, meteorology, and hydrology;

(4) Geology and ground water;

(5) Flood problems in principal reaches of the main stem and tributaries;

(6) Upstream flood and water management problems;

(7) Land use and management related to water (including agricultural drought);

(8) Mineral resources use and management related to water;

(9) Irrigation;

(10) Land drainage;

(11) Navigation;

(12) Municipal and industrial water supply;

(13) Water quality and pollution;

(14) Health aspects;

(15) Recreation;

(16) Aesthetic and cultural values;

(17) Fish and wildlife;

(18) Power;

(19) Sediment and erosion;

(20) Present and future water supply requirements;

(21) Legal and institutional environments (State and local levels) related to water use and development; and

(22) General program and alternatives for development and conservation of water and related land resources, including a discussion of program effects.

5. Form of Report and Appendices

a. The main report will be bound in a separate volume.

b. The appendices (or attachments) should be bound in separate volumes or grouped together in a series of reasonably sized separate volumes.

c. All volumes (main report and appendices) constituting a single report will have distinctive covers of similar colors and design with the contents and participating or contributing agencies identified thereon.

d. Except as noted in item e below, the format of the text of the main report and appendices and the use of illustrations, graphics, and plates will be consistent, generally, with those followed in normal report work of the agency assigned the task of preparing complete elements of the overall report.

e. In the case of multi-agency preparation, the format of the text and the use of illustrations, graphics, and plates will be agreed upon in the field after consideration of the requirements normally placed on all participating agencies.

PART IV

SUBMISSION AND REVIEW PROCEDURES FOR FRAMEWORK REPORTS

1. Field Level Review by Study Participants

The specific views of the interested State and Federal field level agencies in regard to the report will be included in the field review. Such statements, of course, will not commit either the Federal agencies, bureaus, or offices, or the States with respect to later official comments. The views to be included in the report are field level review comments on a field level report. Each of the field representatives of participating Federal Departments and States will be given the opportunity, through field level reviews and letter reports thereon, to support the field level report by endorsement, with or without qualifications, within a 45-day period after completion. At the end of this period the complete report, together with endorsing letters at hand, will be submitted to higher authority in accordance with the following instructions.

2. Review and Submission of Reports of Framework Scope

For the review and submission procedures to be followed once the field level report is completed, the following steps will be accomplished:

a. The chairman of the coordinating group will transmit a complete set of the report documents, including field level comments, to the Executive Director, WRC.

b. The field elements of the participating agencies will initiate concurrent parallel transmission through normal agency echelons for "in-house" processing and review, meeting the statutory and administrative requirements of the individual agencies.

c. Upon completion of agency review and at a date agreed upon, the WRC Member Agencies will submit drafts of their comments to other Member Agencies.

d. In the event a WRC Member Agency wishes to discuss the comments of any other agency, the matter will be brought before the WRC.

e. Upon completion of any formal WRC discussion and report revisions, should any be necessary, a WRC letter will be sent to State Governors and other interested Federal agencies offering opportunity for comment and appearance before the WRC. Ninety days shall be allowed for this review.

f. State and other agency comments will be reviewed and discussed and appended to the report.

g. As a result of possible WRC discussions, agency comments and appearances before the WRC, the WRC Members will finalize their comments and these will be appended to the report.

h. WRC will forward with a letter of transmittal, subject to the appended comments of the separate agencies, the report to the Bureau of the Budget for its views and comments.

i. On receipt of the views and comments of the Bureau of the Budget, the WRC will submit the report to the President with recommendations that it be transmitted to the Congress in partial or full response to study authorizations.

PART V

ADMINISTRATION

1. Purpose of Part V

These guidelines:

a. Indicate the requirements for study authorization and discuss agency participation;

b. Explain measures for the coordination of planning activities at field level;

c. Provide for the preparation of annual coordinated budgets for funding agency activities;

d. Establish overall planning procedures to be followed at field level;

e. Define procedures for the preparation and review of reports at field level; and

f. Provide for study and report publicity, including the preparation and use of brochures and public releases.

2. Study Authorizations

The nature and/or method of obtaining authorizations to participate in specific studies in the comprehensive study program vary among participating agencies. The timely procurement of such study authorizations as may be needed will be the responsibility of each agency. The authorizations should adequately cover the anticipated durations for specific studies and be acceptable, where necessary, as a basis for obtaining study funds.

3. Participation by Agencies

The WRC Member Agencies, in cooperation with the States, and other concerned Federal agencies participate in the provision, correlation, and consolidation of information from studies, in the analyses of water problems relating to all uses, and in the formulation of comprehensive programs for use and development of a basin's water and related land resources. Each coordinates with other agencies so as to consider all needs and to avoid duplication of effort.

Each agency considers the effects of potential water resource development on lands and programs administered by it.

Each agency has specific competence and responsibility and this should be recognized and fully utilized. Each agency should provide the basic data, analyses, and Federal leadership in its special field with full consideration of, and consultation with, other agencies having information and an interest in the field. Where more than one agency is involved in a part of any one study, the leadership will be determined for that part on the basis of available personnel, agency authority and program in the specific geographic area, and requirements of the study. State agency participation in each study will be determined on this same basis.

4. Coordination of Planning

a. Organization Federal - Non-Federal

(1) A comprehensive framework study is proposed for initiation by the Water Resources Council. The decision is based on knowledge of the needs of the region and interest by the States concerned. When a study is proposed for the President's budget, all other Federal agencies known to have an interest will be advised in order to permit timely consideration of participation. Once the study has been proposed to Congress, the States in the geographic area concerned will be advised by the Water Resources Council of the recommendation so as to facilitate State plans for early effective participation in the study if, and when it is, authorized. Formation of a river basin commission under P.L. 89-80 is not a prerequisite to initiation of a study.

(2) Federal agency participation is governed by available funds, Congressional authorizations, agency regulations and policies, and interdepartmentally agreed-upon guidance.

(3) Participation by the States is encouraged to the limit of their interest, available funds (State appropriated, Title III of P.L. 89-80, etc.), and State authorizations.

(4) Each Member of the Water Resources Council and participating States and appropriate interstate commissions are expected to name a representative who will speak for them and coordinate their efforts.

(5) Individuals or public and private organizations may participate through their State representative and/or on an ad hoc basis in specific meetings or with study groups concerned. Interest groups and associations may attend meetings and make presentations to the study participants whenever appropriate.

b. Coordinating Committees

A Coordinating Committee or other field coordination device, as determined by the Water Resources Council, will guide the participants in the conduct of each framework study. If a River Basin Commission is subsequently established in accordance with P. L. 89-80 within the framework study area, appropriate modifications of previously established coordinating arrangements will be made for the Commission area when this becomes practicable. Federal representation will include a representative of each of the WRC Member Agencies. Additional Federal representation may be included from other Federal Department or independent agencies and appropriate interstate commissions when warranted by major responsibilities in the study area of interest. The Water Resources Council will invite the participation of the other mutually agreed-upon Federal agencies and appropriate interstate commissions. The Governor of each State geographically included in the study will be invited to designate a representative. Each Department, State, or Commission will be represented on the Coordinating Committee by a single representative. The chairman of the Coordinating Committee should be the representative of the agency designated by the Water Resources Council as having responsibility for providing leadership in coordinating the study.

c. Committee Meetings

The Coordinating Committee should have regularly scheduled meetings. Special meetings should be called at such other times as deemed advisable by the chairman or requested by a majority of the participants. Generally, meetings should include sessions open to all interested persons and with special invitation being given to the press. Individual meetings may include executive sessions when deemed desirable by the Coordinating Committee or its chairman. Participation at executive sessions should be restricted to committee members or their representatives and others by specific invitation. Invited participants should be identified at the meetings.

The agenda, position papers, and other documents should be prepared and circulated in advance. The chairman should develop and announce the sense of the meeting on items considered; voting will not be employed. Conclusions and other pertinent features of the meetings should be written, distributed to members, and, subject to correction, maintained for the record.

d. Reaching Agreement

It should be the object of serious and concerted efforts to reach consensus at field level on all significant matters. The opposing parties to any disagreement should be encouraged to meet separately in an effort to come to an understanding. If necessary, an ad hoc group should be appointed by the chairman to develop the facts of the case as a basis for further efforts by him to reconcile the diverse positions. The positions of the parties to the disagreement may be considered reserved, subject to later decision at some other coordination level. Also, a complete account of the disagreement and efforts made to resolve the problem may be consolidated and forwarded through agency channels to higher administrative levels. The forum of the Water Resources Council is considered available for decisions at the Washington level.

e. Liaison in Economic Studies and Projections

The chairman of the Coordinating Committee shall designate an appropriate representative to act in a liaison capacity with the chairman of the Economics Committee of WRC in technical matters pertaining to the development and application and use in framework studies of national and regional economic analyses and projections.

5. Coordination of Budgets

An efficient, balanced program of study requires periodic review of the work items, and the timing and magnitude of each agency's input. This can be accomplished by interagency coordination of work and budgets.

a. The chairman of the Coordinating Committee shall call a budget coordination meeting of the participating agencies during the third quarter of each fiscal year (January 1 to March 31) to review the cost estimates as related to the work requirements of the study.

b. Total study cost shall remain unchanged, unless upward adjustments are found to be essential to the satisfactory accomplishment of the study or downward adjustments

can be made. Every effort should be made to absorb any individual increases within the previous total cost estimate for each study. The need for any adjustments should be related to the specific work item requiring more or less funds. In the event it is proposed to increase the total study cost, the nature of the study features to be foregone, if the increase is not provided, will be clearly pointed out. It will also be explained why the study features were not recognized as essential and included in the previous estimate. Adjustments shall, so far as possible, be agreed upon in the field by the cooperating agencies. In cases where agreement is not reached on the extent or handling of adjustments, all pertinent facts shall be recorded by the chairman of the Coordinating Committee as a basis for resolution in accordance with section 4d. Agencies concerned may make separate reports if they so desire.

c. The Summary Justification, Attachment A, and the Agency Justification, Attachment B, shall identify and justify any proposed change in costs as compared with the previous estimates.

d. Each agency shall be responsible for obtaining through its own channels personnel ceilings for work it is to undertake with direct or transfer funds and for including funds within its own budget to meet direct fund requirements.

e. The coordinated budgets shall be presented on forms as in Attachment C.

f. There shall be prepared a brief statement of study history and coordination accomplished.

g. This material shall be assembled into a booklet as follows: (1) History and Coordination, (2) Summary Justifications, (3) Agency Justifications, and (4) Coordinated Comprehensive River Basin Planning Estimates - Fiscal Year for the Next Budget.

h. Services of other Federal agencies which are requested by one of the Members of the Water Resources Council and which require an additional expense over and above the normal operations of that agency should be financed by transfer from the Council Member requesting assistance.

i. Planning work that another Federal agency believes should be undertaken in the context of a comprehensive river basin study, but oriented toward its own responsibilities more than toward the responsibilities of any of the Members of the Water Resources Council, will be financed by the direct funding by that agency. The supplying of information for the use of the Members of the Council which is traditionally financed by the supplying agency will continue to be financed in that manner.

j. The direct or transfer funds of other Federal agencies not associated with the Water Resources Council will not be shown on the Water Resources Council budget tabulations for the comprehensive river basin planning program. The coordinated budget tabulations are program documents for the Water Resources Council agencies rather than accounting documents, and it is desirable to keep the coordination and presentations as simple as possible.

Funds transferred from one of the Council Members to another Federal agency outside the Council will not be identified on the Coordinated Comprehensive River Basin Planning Estimates as a separate item but will be included within the transferring Council Member's program and appropriation estimates.

k. The chairman of the Coordinating Committee shall transmit three copies of the coordinated budget by April 1 to WRC, to the designated Representative of each WRC Member, and three copies to the field office of each Federal agency participating in the study.

l. The WRC Planning Committee will review the field budgets for conformance with these guidelines and to assure a balanced and appropriate national program of study. After agreement is reached among the participating agencies, further fund adjustments shall be limited to the following:

(1) Those which are specifically made by the President, Bureau of the Budget, or the Congress;

(2) Those direct funds which are proportionately applied in accordance with a more general adjustment by the President, Bureau of the Budget, or the Congress, subject to prior notification of other study participants;

(3) Those transfer funds which are proportionately applied and result from (1) or (2) above, subject to prior notification of other study participants;

(4) Those which are decided by mutual agreement at the field level, subject to WRC and agency approval; and

(5) Those which are agreed to by the WRC.

PART V 5 Attachment A

SUMMARY JUSTIFICATION FOR ENTIRE STUDY

(To be Prepared by Chairman)

_____
Study Name

1. Agencies Involved and Total to be Budgeted

AGENCY	AMOUNT
Total	_____

2. Brief Description of Basin

3. Present Development

4. Future Needs

5. Work to be Accomplished for Entire Study

Briefly describe for each agency giving source of funds, i.e., direct appropriation or transfer from another agency. Account for totals in 1 above and describe and justify any adjustment from previous estimates. Relate adjustment to specific work items and indicate necessity for change from previous work plan.

6. Work Accomplished or to be Accomplished Through Fiscal Year Starting July

Give status of work discussed in 5 above by June 30 of the current year and proposed with budget estimate for fiscal year starting July 1.

7. Program for Fiscal Year for the Next Budget

Brief overall description of work to be accomplished on the study with the funds requested in the fiscal year for the proposed budget. Describe and justify any adjustment from estimates shown in previous Coordinated Comprehensive River Basin Planning Estimates.

PART V 5 Attachment B

AGENCY JUSTIFICATION

_____
Study Name

For each Agency as applicable:

1. Department of the _____

   Agency _____

2. Program for Entire Study

Cost, purpose, scope, and detail, including adjustments from previous estimates, should be briefly covered and justified. Relate adjustments to specific work items and indicate necessity for change from previous work plan.

3. Program to be Accomplished for the Fiscal Year for the Next Budget - Estimates $_____

Description and justification, including description of any required adjustments as compared with figures shown on previous Coordinated Comprehensive River Basin Planning Estimates.

4. Source of Funds

Direct Appropriation	$_____
Transfer from _____	$_____
Transfer from _____	$_____
Transfer from _____	$_____

SAMPLE COORDINATED BUDGET FORM

FOR OFFICIAL USE ONLY

PART V 5, Attachment C
R September 1967

COORDINATED COMPREHENSIVE RIVER BASIN PLANNING
ESTIMATES FOR FISCAL YEAR 1970
April 1, 1968

Chairman _____

Mid-America Region

Coordinating Committee _____

Type 1

(In thousands of dollars)

Item	Method of financing	Total estimated cost	To June 30, 1968*	Fiscal year 1969	1970	1971	1972
PROGRAM:							
Department of Agriculture		1,200	80	330	330	290	170
Soil Conservation Service	Direct	(700)	(30)	(200)	(200)	(180)	(90)
Forest Service	Direct	(200)	(20)	(40)	(50)	(50)	(40)
Economic Research Service	Direct	(300)	(30)	(90)	(80)	(60)	(40)
Department of the Army		1,600	100	410	520	410	160
Corps of Engineers	Direct	(1,600)	(100)	(410)	(520)	(410)	(160)
Department of the Interior		2,470	480	650	610	500	230
Geological Survey	Transfer from Reclamation	(90)	(20)	(40)	(20)	(10)	---
Indian Affairs	Transfer from Reclamation	(30)	(10)	(10)	(10)	---	---
Land Management	Transfer from Reclamation	(60)	(10)	(20)	(20)	(10)	---
Mines	Transfer from Reclamation	(70)	(30)	(20)	(10)	(10)	---
National Park Service	Transfer from Reclamation	(20)	---	---	(10)	(10)	---
Outdoor Recreation	Direct	(100)	---	---	(40)	(30)	(30)
	Transfer from Reclamation	(40)	(20)	(20)	---	---	---
Reclamation	Direct	(1,500)	(360)	(370)	(330)	(310)	(130)
Sport Fisheries and Wildlife	Transfer from Reclamation	(100)	(20)	(20)	(20)	(20)	(20)
Water Pollution Control Administration	Direct	(450)	---	(150)	(150)	(100)	(50)
	Transfer from Public Health Service	(10)	(10)	---	---	---	---
Department of Health, Education, and Welfare							
Public Health Service	Direct	40	40	---	---	---	---
Federal Power Commission		100	10	30	20	20	20
	Direct	(80)	---	(20)	(20)	(20)	(20)
	Transfer from Army	(20)	(10)	(10)	---	---	---
TOTAL PROGRAM		5,410	710	1,420	1,480	1,220	580
APPROPRIATIONS:							
Department of Agriculture		1,200	80	330	330	290	170
Department of the Army		1,620	110	420	520	410	160
Department of the Interior		2,460	470	650	610	500	230
Department of Health, Education, and Welfare		50	50	---	---	---	---
Federal Power Commission		80	---	20	20	20	20
TOTAL APPROPRIATIONS		5,410	710	1,420	1,480	1,220	580

*Direct funds in this column are: (1) Agriculture - estimated obligations; (2) Army - appropriations; (3) Interior - Reclamation's are expenditures, others are allocations; (4) HEW - allocations; and (5) Federal Power Commission - allocations.

6. Planning Procedures

a. Perspective

All viewpoints - public and private, national, regional, State, and local - shall be fully considered and taken into account in planning water and related land resource development. Planning will be coordinated with local, State, and regional efforts as well as Federal programs. There is no intent, however, to participate in master-planning for overall development, nor should the regular programs of participating agencies be furthered at the expense of the comprehensive study.

b. Plan of Study

In the first funded year of the study, participants should develop study objectives, scope, organization, tentative report outline, manner of operation, work plan, schedules, and budget program. These, in turn, should be incorporated in a Plan of Study as prescribed in Part II of these guidelines. The Plan of Study will include the authorizations and planned work of all study participants. It will be reviewed at least annually and revised as necessary.

The purposes of the Plan of Study are to:

(1) Provide a practical aid to participating States and agencies in the coordinated, efficient, economical, and complete fulfillment of requirements of the study.

(2) Define at the earliest practicable date the more complicated problems of organization, analysis, and administration; the general policies involved; the needs and objectives of the investigation; and the scale and scope of studies required. The need for assistance by Federal agency representatives, the Planning Committee of WRC, or others may similarly be recognized at an early date.

(3) Insure early and continuing recognition of the need for coordination among the participating States and agencies to avoid unnecessary delays in the investigations.

(4) Provide WRC and participating agencies with information, in advance, on the nature, direction, and intent of the investigations.

The Plan of Study will be based on careful analysis of the problems to be studied as revealed by previous investigations, current knowledge of conditions, and local information.

Development of the Plan of Study requires thorough familiarity with earlier studies; an appreciation of available data; full consideration of current policies, procedures, and regulations of the participating States and agencies; and jointly agreed-upon guidance prepared by the Water Resources Council.

Basin analyses requiring advance preparation, contractual services, general approval, or those affecting other studies will be identified for appropriate scheduling.

The Plan of Study will be prepared in concise form and it will be made available to all personnel working on the investigation. It will be viewed as the specifications for the investigation and will specify methods to be used, physical work to be accomplished, precision and accuracy to be required, schedules to be met, cost limitations, coordination to be accomplished, and management and control procedures.

While a Plan of Study must necessarily be flexible, any major deviation or change will be carefully considered and justified. The major and essential elements should be kept current for satisfactory guidance.

Upon completion of coordination and review by the Coordinating Committee, the Plan of Study will be considered a working document. At that time it will be forwarded to the Executive Director, WRC, and through agency channels to the agency representative of the WRC Member. Recommended revisions, if any, will be returned to the field elements through agency channels. Agency participation will be in accordance with applicable agency responsibilities and regulations.

An outline indicating the usual major items to be included in the Plan of Study is attached.

c. Items of Work

In conjunction with the development of the Plan of Study, all items of work or study elements required to meet the objectives of the investigation should be determined.

d. Assignments

Assignment of items of work by the chairman or otherwise, as directed by the Coordinating Committee, should take cognizance of each participant's primary area of responsibility, competence, and interest. State and local

agencies should normally undertake study elements that are primarily of regional or local significance and in line with their programs and competence. Work assignments become part of the working Plan of Study. The scope of the work should be mutually agreed upon by the designated agency or ad hoc group and the Coordinating Committee.

e. Use of Task Forces and Work Groups

Work assignments should normally be made directly to individual participating agencies. Under certain conditions, ad hoc task forces and work groups may be helpful. These task forces and work groups should be formed on an ad hoc basis when interest, responsibility, and capability in a specific study element are shared by two or more agencies. Task forces should be chaired by the agency having primary responsibility in that study area as provided in section 3. Task forces and task force membership should be held to an essential minimum. Direct coordination and the use of the Coordinating Committee meetings to bring the activities of responsible agencies and work groups to the attention of all participants should be exploited.

f. Staffing Procedures - Use of Consultants

All agencies participating in the study are expected to support the investigation with their own personnel as their technical and administrative resources, funds, and other workload permit. Work assignments to agencies will be in keeping with normal agency responsibilities and interests. When services of individuals not members of an agency's own staff are contemplated, the Coordinating Committee should be advised immediately. Prior to final arrangements for contractual services, opportunity should be afforded other study participants to undertake the work or to incorporate requirements for related work.

g. Coordination of Basic Data and Their Use

Certain data and information, for example, stream mileages, drainage areas, estimates of present water usage, projections of economic indices, effective and/or target dates, and other items, are common to a number of study elements assigned to various participating agencies. Such data and information should be carefully considered and coordinated in the interest of regional and national consistency

and necessary guides or directives pertinent thereto furnished all study participants to assure consistent and uniform intra-study interpretation and use thereof. Care should be taken to keep such guides and directives in brief, concise, usable form.

Data which have been collected in confidence and cannot be disclosed in detail should be assembled by the collecting agency so that the confidence is protected. Appropriate interpretation should be furnished so that such information is not misleading.

h. Data Bank and Retrieval

Data developed in support of the current study, as well as pertinent data developed as a result of other investigations, should be catalogued as to subject matter, scope, and agency and office where filed. A listing of this catalogued information should regularly be brought up to date and provided to all study participants. Bibliographies and other source materials should be similarly included in the periodic listing. The data bank should be restricted to material considered pertinent and useful to the particular study only.

i. Network Analysis

Network diagrams are desired to insure that each contributing agency is aware of the relationship of its input to the progress of the study as a whole. They should be employed in planning, scheduling, coordinating, and managing the costs and work items of the study. The analysis should make apparent the impact and indicate adjustments due to changes in planned expenditures of time, funds, or manpower. Analysis may also bring to light study organization weaknesses and indicate steps necessary to obtain or maintain a more balanced effort. The diagram is also useful for reporting purposes.

An analysis of each significant study-connected activity will be prepared by the responsible participant. These analyses will be furnished to the chairman of the Coordinating Committee for the formulation of a network of the entire study. In developing the overall network, participants should assist in the determination of dependency relationships and critical dates.

The diagrams developed should show graphically what is being done, the time estimated to accomplish the work, who will do the work, when it is to be started and finished,

and its interdependency with other efforts. Activities selected should be of sufficient magnitude as to be relatively insensitive to day-to-day fluctuations in timing or application of effort. In this connection, activities extending over a period of a quarter or more, in general, appears to be appropriate. Diagrams should be time-scaled showing actual target dates and elapsed months.

Discretion and restraint in the selection of activities will be necessary to avoid a diagram that is constantly out of date and too complicated to be useful. Except for major changes in study approach which are not and cannot be anticipated, it is envisioned that major updating of the network would be accomplished once each year - possibly toward the end of the first fiscal quarter when allocation of funds for the ensuing year is usually known.

The network will be included in the Plan of Study and will be a reference when discussing progress in the quarterly status report.

j. Research

Research, as such, will not ordinarily be included in a framework study. Research needs relating to unresolved major problems or gaps in planning for the development and use of water and related land resources should be identified in the report.

Part V 6 Attachment

OUTLINE OF PLAN OF STUDY

1. Summary sheet.

2. Authorizations for study (all participants).

3. Delineation of the study area into subregions.

4. Brief resume of existing water and related land resource development:

   Flood prevention and control, navigation, water supply, recreation, water quality, fish and wildlife, irrigation, power, watershed improvements, other.

5. Brief statement of regional interests, objectives, and goals in water and related land resource development.

6. Statement of objectives of investigation.

   a. Summary of water related needs and problems of areas under investigation both immediate and long range.

   b. Indicate the initial studies required to determine the objectives of investigation when these cannot be determined fully at the outset.

7. Summary of available pertinent data (hydrologic, topographic, geologic, engineering, soils, land use and cover, economic, etc.) including available helpful reports, by subregions.

8. Statement of economic studies required, including specifications of basic assumptions and procedures, if practicable, to establish the possible ranges of use which might be made of project services.

   a. Economic base studies, economic trends, development factors.

   b. Analysis of various water resource development needs: power, water supply, flow regulation, pollution abatement, recreation, fish and wildlife conservation, flood control, navigation, and irrigation.

9. Statement of engineering, economic, and other studies required, including specification of basic assumptions and procedures, if practicable, to establish the nature, scale, effect, cost, and relative merit of possible alternative plans of development.

   a. Inventory of types of alternatives to be considered.

   b. Statement of specific field and office studies required and agency or work group responsible.

10. Statement of applicable constraints and controls.

   a. Definition to the extent practicable of those problems which may be treated on an individual basis and those which must be analyzed on a system or subsystem basis.

   b. Statement of known limits on scale of development of types of facilities to be considered.

   c. Statement of procedures for phasing economic and engineering studies, and the degree of precision required at various levels of investigation.

   d. Statement of controls to be used to avoid continuance of studies beyond profitable limits and to insure necessary flexibility.

11. System to be followed and organization to be used to facilitate cooperation and coordination required to accomplish the study. Include names and addresses of agency and State representatives concerned, and measures to be taken to insure coordination.

12. Organization of agencies, States, subcommittees, and other working groups to accomplish the study.

13. Work schedule for timing and coordination of principal phases of investigation, assuming funds are available to permit efficient prosecution of the work. A network analysis will be prepared and included in limited, but sufficient, detail to depict the timing and interrelationships of the contributing participants to the completion of the study.

14. Tentative outline for the final report and appendices, with related work plan as appropriate.

15. Public relations plan for the study to include public contacts, brochures, and press relations.

16. Estimates of costs for each major element of the study by agency.

17. Illustrative maps or drawings.

18. Approval and acceptance by participants.

7. Reporting Procedures (See PART III)

a. Editorial Standards

To insure the professional quality of the written report, appropriate uniformity in the use of technical terms, format and report organization, and literary cohesion among the report volumes, the chairman of the Coordinating Committee will, in the first year of the study, provide for the establishment of editorial standards. The designated individual or group to accomplish this will function on an as-needed basis until completion of the report.

b. Drafts

Drafts of portions of the report and appendices submitted will be reviewed, as directed by the Coordinating Committee, for technical content and, as provided above, for editorial standards. Redrafts will be handled similarly. Technical assistance may be required from task forces, agencies, and individuals in this process. The redrafting and reviewing process will be held to a minimum consistent with the accomplishment of an accurate, concise, readable report.

c. Field Reviews

During review of the probable final draft of the complete report the Coordinating Committee members will obtain field level review by their State or Federal agencies. Any Federal or State agencies that are not represented on the Coordinating Committee, but which may have an interest in the report, should be asked to review this final draft and submit comments deemed necessary. At this point, the Coordinating Committee members should establish their field-level position with regard to the report.

d. Intrastudy Reporting

Control must be maintained over the report writing work being accomplished by various subgroups and agencies contributing to the final product. Simple progress reports should be supplied to the Coordinating Committee by those pursuing long-range tasks. Completed technical materials and compiled data should be made available on schedule to those who must use it in their report writing.

e. Alternative Views

At the time the final draft review is in progress, any alternative views should be clearly stated and presented to the Coordinating Committee for inclusion in the final field report.

f. Final Report Packaging

The final report printing and distribution will be accomplished under the direction of the Coordinating Committee.

8. Public Information Efforts

a. Press Relations

Studies in the comprehensive basin study program should be conducted in a manner to assure public understanding, acceptance, and cooperation. A program to distribute information pertaining to the study is necessary. Such a program may include, but not necessarily be limited to, public hearings, informational meetings, technical papers, correspondence, press releases, radio and television programs, and similar measures as required and consistent with the public interest. A sound working relationship with the press should be established by the Coordinating Committee at the outset of a specific study and sustained throughout the study duration. Such relationship should be distributed throughout the study area to be most effective.

b. Brochures

A brief illustrated brochure, preferably in a foldout style, should be prepared as directed by the Coordinating Committee at the earliest practicable date after initiation of a specific study. This early brochure would serve primarily as a means of informing local interests and others of the nature, scope, area coverage, participating agencies, estimated time of completion, and other features of the study. A more complete brochure in pamphlet form, and presenting brief summaries of the tentative findings of the study should be prepared similarly near the end of the study period for general public information purposes.

c. Press Releases

Press releases relative to study activities and tentative findings of specific study elements, such as the economic base study, should be prepared as directed by the Coordinating Committee as appropriate and in the interest of good public relations. These should be on topics of general interest and so spaced as to sustain public interest in the study.

PART VI

RELATED LAND

In making studies of water and related land resources, a distinction is made between all land in a region and "related land" associated with water resource development projects. All land is recognized as influencing various factors to be considered in water resources development but only "related land" is involved directly in comprehensive river basin plans.

All land in the region will be considered generally as a part of the resources of the region contributing to and/or influencing the water resources, water problems, and economy of the region. For example, plans for development of the water and related land resources of a region may appropriately recognize that all land of the region will be used in accordance with its capabilities and be given conservation treatment in accordance with its needs as they arise in connection with such use.

The term "related land," as used in connection with comprehensive plans for the development of water resources as derived through studies included in the Coordinated Comprehensive Basin Planning Program, refers to land that is associated with water resource developments either through the effects of the land on the water resources, or the effects of the water resources and their development features on the land. Consequently, in connection with studies of water and related land resources, "related land" is:

1. That land on which projected use and/or management practices may cause significant effects on the runoff and/or quantity and/or quality of the water resource to which it relates.

Examples:

a. Dry land that is to be irrigated, or irrigated land with an inadequate water supply that is to be furnished additional water by project development, with resultant increased consumptive use of water.

b. Land that contributes excessive amounts of sediment or other pollutants to streams.

2. That land the use or management of which is significantly affected by or depends on existing and/or proposed measures for the management, development, or use of the water resource to which it relates.

Examples:

a. Dry land or irrigated land with an inadequate water supply that can be furnished additional water by project development.

b. Land that is subject to, but so situated that it can be protected from, flood, sediment, and/or salinity damage.

c. Land which may be inundated by, or developed and/or managed in connection with, use of an existing or proposed reservoir or other water resource development.

d. Land, the administration and management of which may be affected by construction of a reservoir or other water resource development.

e. Land, the use and productivity of which may be affected by a change in the level of the water table caused by a water resource development.

PART VII

STATE PARTICIPATION

The States will be invited and afforded opportunity to participate with the Federal agencies in the comprehensive water resource study programs. State representation on the Coordinating Committee, and such subcommittees or work groups where the State has an interest, will be the responsibility of the State. The States should be encouraged to participate in the studies to the full extent of their capabilities, interests, and funding capacities. The latter may be by direct financing and/or as provided under Title III of the Water Resources Planning Act, Public Law 89-80, or other applicable Federal grant programs.

At the start of a study, the Governor of each State geographically included in the study area will be invited to name an individual to represent the Governor and the State on the Coordinating Committee, or to represent the State as may otherwise be indicated. It will logically be the responsibility of such designated representative to coordinate the various study efforts of his State and inform the necessary individuals and agencies within his State of pertinent study matters.

The States may participate in study matters to a degree that they themselves determine. State participation may include, but not necessarily be limited to: compilation of data for use by study participants; assignments from the Coordinating Committee; study elements or work items in greater depth or detail than is proposed by or permitted the Federal agencies; and work items or substudies associated with the study that are of peculiar interest to the State, but not planned to be undertaken by the Federal agencies. Any study contribution by the States should be reflected in, and in accordance with, the general agreement on work plans of all study participants.

The States will be encouraged to undertake a review of their water problems, laws, particular needs, institutions, and impediments to the development of their water resources, and the implementation of a water resource development plan. The States will be encouraged to avail themselves of basic study data (hydrology, economic base, etc.), with the objective of putting together or augmenting a State water plan integrating Federal, State, and local plans for the area as contemplated by Title III of Public Law 89-80.

The States will be given equal opportunity with the Federal agencies to review and comment on drafts of study elements, appendices (see PART IV), and the study report in final form. Their signed comments in such detail as they desire will become part of the overall study report. The review at field level prior to transmittal will be accomplished according to the time schedule established for review by all study participants. The failure of a Federal agency or State to submit comments will not be a basis for delaying progress of the study or interfering with its scheduled submission.

GSA-WASH DC 68-6115