An Analysis of the Work of the Senate Select Committee on National Water Resources, 1959-1961

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THE SENATE SELECT COMMITTEE ON NATIONAL
WATER RESOURCES, 1959-1961†

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In April of 1959, during the first session of the 86th Congress, the United States Senate agreed to Senate Resolution 48, creating a Select Committee on National Water Resources. The Committee was directed

... to make exhaustive studies of the extent to which water resources activities in the United States are related to the national interest, and the extent and character of water resources activities, both governmental and non-governmental, that can be expected to be required to provide the quantity and quality of water for use by the population, agriculture, and industry between the present time and 1980, along with suitable provision for related recreational and fish and wildlife values; to the end that such studies and the recommendations based thereon may be available to the Senate in considering water resources policies for the future.

Twenty-one months later, on January 30, 1961, the Committee made its report to the Senate, and ceased to exist at the close of business on the following day. This paper discusses the background leading to the formation of the Committee, its objectives, the work that was done, and the recommendations that were made, and concludes with an evaluation of the part played by the Committee in the evolution of national water policy.

BACKGROUND LEADING TO THE FORMATION OF THE COMMITTEE

Senate Resolution 48 of the 86th Congress was introduced on January 27, 1959,1 by Senator Mike Mansfield, acting for himself and his senior colleague from Montana, the late Senator James E. Murray, Chairman of the Senate Committee on Interior and Insular Affairs. In introducing Senate Resolution 48, Senator Mansfield called attention to the growing rate of water use in the United States, which was forecast to increase to about 350 million gallons per day by 1975.2 He suggested that there was not under construction or planned for con-

† This paper was prepared at the end of the first session of the 87th Congress, and reflects only actions taken through October, 1961.

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struction, by public and private agencies combined, water resources projects that
daily would provide that amount of water of acceptable quality. He called atten-
tion to the rising standard of living with its attendant increases in water demand,
and the increased use of water by industry. He cited newspaper articles stating
that some industries were not locating new plants in otherwise favored localities
because of doubt as to the adequacy of future water supply. He made reference
to the report of the President's Water Resources Policy Commission which
reported to President Truman in 1950, and noted the fact that neither it nor
other reports dealing with national water resources policy had become the basis
for congressional action.

Senator Mansfield continued by drawing a parallel with the situation that
existed in the 84th Congress when the Senate had felt the need for an over-all
review and coordination of foreign aid legislation. On that occasion, the review
involved matters coming under the jurisdiction of the Committee on Foreign
Relations, the Committee on Armed Services, and the Committee on Appropri-
ations. In order that a study and recommendations could be made on the foreign
aid program, without impinging on the jurisdiction of the three standing com-
mittees, the Senate had agreed to Senate Resolution 285, 84th Congress, which
established a temporary Select Committee formed of members of the aforesaid
three standing committees. That Select Committee had functioned effectively and
made a report which became the basis for many changes and improvements in
the foreign aid programs. Senator Mansfield stated his view that the comprehen-
sive legislative program needed for water resources necessarily would consist of
many, many, individual enactments. He emphasized that, as in the case of the
studies and report on the foreign aid program, any Senate action consequent to
the recommendations of the Water Resources Select Committee would, of course,
be in accordance with the established procedures of the Senate. That is, any
recommended legislation would be referred to the appropriate standing commit-
tees of the Senate, which he named as being principally the Committee on Interior
and Insular Affairs and the Committee on Public Works. The Committee on
Interstate and Foreign Commerce also would be affected, he said, because of its
concern with fish and wildlife conservation.

It is interesting to examine the background into which Senate Resolution 48
was introduced. Since the end of World War II, no less than eight major com-
missions or committees had made studies and recommendations having a bearing
on national water resources policy. The two Hoover Commissions and their
Task Forces had made drastic recommendations with respect to reorganization
and consolidation of federal agencies involved in water resources and modifica-
tion of federal programs. In 1950, President Truman's Water Resources Policy

3. Comm'n on Organization of the Executive Branch of the Gov't, Organization
and Policy in the Field of National Resources; Task Force Report on Water Resources
Commission had completed a voluminous report\textsuperscript{4} with over 100 recommendations of policy steps necessary to improve national policies for dealing with water resources. In June 1952, President Truman's Materials Policy Commission had emphasized the importance of water as an industrial material, made forecasts of water needs in the future, and suggested steps that should be taken to insure that these needs could be met.\textsuperscript{5} The steps proposed included strengthening Federal pollution abatement programs, increasing research programs, and establishing means of achieving coordinated river basin planning. The Subcommittee to Study Civil Works of the Public Works Committee, House of Representatives, in December 1952, had issued four reports\textsuperscript{6} pointing to the desirability of eliminating conflicts between federal agencies. The four reports suggested coordination of the water resources programs of the federal agencies, and that there should be congressional policy determination in such areas as delineation of federal, state, and local responsibilities in water resources development, formulation of uniform standards for use by executive branch agencies for measuring the economic justification of water resource development projects, and establishment of uniform standards for allocation of costs. The Missouri Basin Survey Commission, in 1953, had recommended a revision of governmental machinery for handling water resources development in the Missouri Basin by the establishment of a federal resource development planning and programming agency.\textsuperscript{7} Among other things, the Commission had included recommendations on national policy calling for greater local financial responsibility for water resources development projects, and an increase in federal payments in lieu of taxes on lands taken for federal projects. In 1955, the Commission on Intergovernmental Relations had recommended policy changes in the water resources field including establishing a permanent Board of Coordination and Review, giving greater initiative to the states in water development projects, and equitable sharing of capital costs between federal and state governments.\textsuperscript{8}


All of these reports had been controversial and most of them were marked with dissenting views expressed by members of the Committees and Commissions. The last water policy report had been made by the Advisory Committee on Water Resources Policy to President Eisenhower. It proposed a series of policy changes stated to be intended to provide the States and local water resources agencies a more adequate voice in the planning and development of projects, and to facilitate joint participation by all of the affected federal interests. The President had transmitted the report to the Congress, but no action had been taken to implement its recommendations. On the contrary, the Senate, in agreeing to Senate Resolution 281 of the 84th Congress, and Senate Resolution 148 of the 85th Congress, appeared to express a considerable difference in viewpoint from the Administration’s position as outlined in the Advisory Committee’s report. The Advisory Committee had recommended a tightening of standards for economic evaluation of proposed projects, and increased sharing of costs by local beneficiaries, together with a centralization of federal power, in the water resources field, in the Executive Branch through a Coordinator of Water Resources reporting directly to the President and an independent Board of Review. On the other hand, Senate Resolution 148 appeared to be aimed in the direction of liberalizing procedures for economic analysis, speeding up the authorization of projects, and strengthening the decision-making role of the Congress in the water resources field.

Other actions in this area during the 84th to the 86th Congresses had demonstrated rather significant lack of agreement between the Executive and Legislative Branches as to just what needed to be done in the field of water resources. For example, for the first time since wartime years, the President had vetoed omnibus rivers and harbors and flood control authorization legislation. The proposed Rivers and Harbors and Flood Control Act of 1956, was vetoed in August of that year on the grounds that it contained too many projects not yet reported on by the Executive Branch of the government and that it would have authorized certain projects requiring a lesser degree of local participation than was believed desirable. After the reports on many of the projects objected to in the veto message were completed, a similar bill was again passed by the Congress, early in 1958, and again was vetoed on policy grounds. It was not until

10. Agreed to July 26, 1956, 102 Cong. Rec. 10150.
13. S. 497, 85th Cong., 2d Sess. (1958), “AN ACT Authorizing the construction, repair and preservation of certain public works on rivers and harbors for navigation, flood con-
near the end of the session, in June, that the differences between the Executive Branch and the Legislative Branch were resolved and the bill was finally enacted and approved by President Eisenhower on July 3, 1958.14

Further controversy arose each year over the annual Public Works Appropriations bill. The President's budget rarely contained enough “new starts” to satisfy congressional proponents of the water resources program. Each year numerous “new starts” were added by the Appropriations Committees of both Houses and usually were retained in the enactment of the bill. In the Budget for the 1959 fiscal year, submitted to the Congress on January 13, 1958, no provision was made for starting new projects, and the President's Budget Message stated that the Budget contemplated a policy of “stretching out construction on certain public works projects where this can be done without impairing the value of investments previously made.”15 The House Committee on Appropriations rejected16 this portion of the public works budget and requested more realistic budget requests to be submitted. On March 8, 1958,17 the President announced that he was requesting the budget for water resources agencies be increased by a total of $186 million. Formal amendments to the January Budget were subsequently transmitted to the Congress.18 The President, however, did not recommend starting any new water resources projects. Before finally enacting the Public Works Appropriations Act for fiscal year 1959, the Congress added 65 unbudgeted new project starts, having a total cost of almost $700 million dollars, to the President's budget. In signing the bill, the President denounced this action of the Congress as “an instance of irresponsibility in the expenditure of public funds,”19 but added that he was compelled to sign it because it appropriated essential funds for continuing going work on projects started in previous years.

The “no new starts” policy was continued in the 1960 Budget Message submitted to the Congress on January 19, 1959,20 just a few days prior to the intro-

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17. White House news release, containing the text of a letter from the President to the Hon. William F. Knowland and the Hon. Joseph W. Martin, Minority Leaders in the Senate and the House of Representatives, respectively.
duction of Senate Resolution 48. Dire predictions were made on the one hand, that the "no new starts" policy would cripple the Nation's economic capacity, and on the other hand, that the "new starts" added by the Congress in previous years would have calamitous effects on the budget. The controversy over "new starts" in the water resources field reached a climax later in 1959 when the President vetoed the Public Works Appropriations Act for 1960, which included 67 unbudgeted "new starts," costing over $800 million by the time it reached him.21 Subsequently, the Public Works Appropriation Act was passed again with a slight reduction in the amounts but not in the projects and, upon being vetoed for the second time,22 it was passed over the President's veto on September 10, 1959—the first of President Eisenhower's legislative vetoes to be overridden.

Later, on one other occasion, President Eisenhower vetoed legislation in the water resources field.23 This was in connection with the proposal to increase federal grants to municipalities for construction of sewage treatment works. The House of Representatives sustained the veto, however, and legislation in this field was put off for more than a year.

ACTION ON SENATE RESOLUTION 48

In the light of all this controversy surrounding the water resources field, the proposal for overall studies of water resources as related to the national economy, to be used as a guide to the Senate in its consideration of future water resources policies, appeared quite timely and appropriate. Subsequent to the introduction of Senate Resolution 48 a number of senators from western states endorsed it. On February 19, on the floor of the Senate,24 Senator Mansfield expressed the hope that action would soon be taken on the resolution by the Senate Committee on Interior and Insular Affairs, to which it had been referred. The Majority members of the Senate from the eleven Mountain and Pacific States and Alaska, Oklahoma, and Texas, held a conference on February 20, 1959, at which passage of Senate Resolution 48 was unanimously endorsed.25

Hearings on Senate Resolution 48 were held by the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs on March 17, 1959. Support was expressed by several senators from western states and by a representative of the National Reclamation Association. Senator Mans-

field suggested some technical amendments, including an amendment to add representation on the Select Water Committee from the Committee on Agriculture and Forestry of the Senate. Senate Resolution 48 was reported favorably by the Committee on Interior and Insular Affairs on March 24, 1959, with the amendments suggested by Senator Mansfield. It was referred to the Committee on Rules and Administration, and was reported by that committee, with additional amendments, on April 15, 1959.

In recommending approval of the resolution, the Committee on Interior and Insular affairs suggested that the Select Committee's report "... should respond specifically and factually to questions about water resources programs such as:

1. How much water development is needed?
2. When it is needed?
3. Where it is needed?
4. What should be the pattern of water development?
5. What levels of cost and expenditures are justifiable for future water development?"

The Interior Committee noted the short time available to complete the report, as the resolution called for the Select Committee's existence to cease on January 31, 1961, but drew attention to the fact that a great deal of the basic technical data on water resources and water uses had been assembled for a good many years by federal and state agencies. The Interior Committee suggested that use be made of all the facts available from the federal and state agencies, urging that two important gaps be filled to make this material useful in formulating the Select Committee's recommendations. These were "(1) ... guides as to what amounts of water will be required in relation to various levels of population and economic activity. Stated in time periods and by geographic areas, these requirements will indicate the goals of water resource development programs;" and "(2) ... guides as to the economic limits for water development—that is, what costs per acre-foot are economically justified for water for various uses, and how much expenditure of public and private funds can be economically justified for water programs."

In the form recommended by the Committee on Rules and Administration, the Select Committee was to have twelve members, three each from the Senate Committees on Interior and Insular Affairs, Public Works, Interstate and Foreign Commerce, and Agriculture and Forestry. The resolution provided for $175,000 to carry out the work of the Select Committee for the period through January 31, 1960. The proposed budget provided for a staff of four: a staff director, one professional assistant, and two clerical and administrative assistants. Provision was made also for consultants, when actually employed, and for research contracts.

FORMATION AND STAFFING OF THE COMMITTEE

Senate Resolution 48 was considered by the Senate on April 20, 1959, and agreed to, as amended. Members of the Committee were appointed on April 24, 1959, by the chairmen of the four standing committees from which the membership was to be drawn. The Select Committee met for the first time on Monday, April 27, and Senator Robert S. Kerr of Oklahoma was unanimously chosen to be Chairman. Senator Thomas H. Kuchel of California was elected Vice-Chairman. The Committee felt the need to increase the membership of the Committee to give representation to areas of the country which were not represented in the original selection of members. Therefore, on April 28, 1959, Senate Resolution 111 was agreed to, enlarging the Committee membership by four members to be appointed by the Vice President, two each from the majority and minority parties. These members were appointed on May 12, 1959. Subsequently on May 19, 1959, Senate Resolution 121 was introduced to appoint the Chairman of the Senate Committee on Interior and Insular Affairs to ex officio membership on the Select Committee, and the resolution received Senate approval on June 1, 1959. The membership of the Committee thus consisted of 17 Senators, all but four of whom were from the arid or semi-arid states lying wholly or partly west of the 100th Meridian.

At its first meeting the Select Committee appointed a subcommittee of three to select the staff. Dr. Edward A. Ackerman, Executive Officer of the Carnegie Institution of Washington, who had formerly directed the Water Resources Program of Resources for the Future, was engaged to begin preliminary planning for a program of studies to develop the background material required for the Committee's work. Shortly afterward the Legislative Reference Service of the Library of Congress requested the writer to serve as Staff Director, and I began to work for the Committee on May 19, 1959, just one day less than a month after the Committee was established. As soon as the necessary arrangements could be made, the Committee retained the services of two additional consultants, W. G. Hoyt, a retired hydrologist with over 40 years of experience with the Geological Survey and the U.S. Department of the Interior, and Dr. Abel Wolman of the Johns Hopkins University, an internationally recognized consulting engineer in the fields of sanitary engineering, water supply, and public health. The three consultants served on a "when actually employed" basis in the planning of the Committee's program of staff work. A few weeks later, two more consultants were retained, Dr. Gilbert F. White, Chairman of the Department of Geography at the University of Chicago, an expert on flood damage prevention, and

28. Senators Robert S. Kerr, Oklahoma; Thomas H. Kuchel, California; Dennis Chavez, New Mexico; Allen J. Ellender, Louisiana; Warren G. Magnuson, Washington; Clinton P. Anderson, New Mexico; Henry M. Jackson, Washington; Clair Engle, California; Philip A. Hart, Michigan; Gale W. McGee, Wyoming; Frank E. Moss, Utah; James E. Murray, Montana; Milton R. Young, North Dakota; Andrew F. Schoeppe1, Kansas; Francis Case, South Dakota; Thos. E. Martin, Iowa; Hugh Scott, Pennsylvania.

Col. H. C. Gee, a consulting engineer in West Palm Beach with many years of previous experience in water resources work as an officer of the Corps of Engineers.

Mr. Hoyt was able to devote about four days each week to the work of the Select Committee, and his willingness to help out on any problem that confronted the staff director made it unnecessary to recruit additional professional staff. Don McBride, professional engineer on Senator Kerr's staff, gave very liberally of his time and energy to the work of the Select Committee. The balance of the committee staff consisted of an administrative assistant, a stenographer, and a typist. From time to time, when the press of work became particularly heavy, members of Senator Kerr's office staff helped out for short periods of time.

Each of the four standing Committees, from which the initial members of the Select Committee were appointed, was asked to provide a staff liaison representative. Those who served in this capacity were: Cotys Mouser, from the Committee on Agriculture and Forestry; Eugene D. Eaton, with the late Goodrich W. Lineweaver as alternate, from the Committee on Interior and Insular Affairs; Harry W. Huse, from the Committee on Interstate and Foreign Commerce; and John L. Mutz from the Committee on Public Works. As advisers to the staff, they served throughout the existence of the Select Committee. The experience of this group, with its considerable knowledge of how to get things done on Capitol Hill, contributed a great deal to the rapidity with which it was possible to get the staff work of the Select Committee under way.

At the same time, a great many staff members of the water resources agencies of the federal government were asked to serve informally as advisers in formulating the technical program. They gave freely of their time and advice to the Committee staff, and helped in launching the work with a minimum loss of time. Among this group particular acknowledgment is made of the work of Howard Cook, of the Corps of Engineers, Roy E. Oltman, of the U.S. Geological Survey, Meltin E. Scheidt of the Public Health Service, and Harry A. Steele of the Department of Agriculture.

THE COMMITTEE'S WORK

The next formal meeting of the Select Committee was held on June 11, 1959, when the Committee considered and approved a general outline for studies designed to provide background information for the Committee's report. The Committee authorized the staff to proceed with the initial steps of this program—to solicit federal and state agencies for their views on existing problems in the water resources field and request the first projections of future demands for water and water-related activities.

The first requests were made to the Department of the Interior, the Federal Power Commission, and the Bureau of the Census, U.S. Department of Com-
merce. The Department of the Interior, through the Geological Survey, was asked to provide a qualitative and quantitative summary of water resources by river basins, including surface and ground water, withdrawals and consumptive uses of water, and problems relating to such use. The Federal Power Commission was asked to project demands for electrical energy into the future, and make estimates of future use of water in the electric power industry, and population projections were requested from the Bureau of the Census.

In order that the statistics and data collected by the Department of Agriculture and the Census Bureau, by counties, could be collated by river basins, and related to water resources data collected by the Geological Survey and other agencies by river basins, it was necessary for the Committee's purposes, to break down the entire country into river basins or groups of river basins termed water resources regions. The boundaries of the water resource regions follow the county lines nearest to the watershed boundaries, and are similar to those which were used by the Bureau of the Census in the 1954 Census of Manufacturers. A considerable amount of statistical work was involved in making up and checking the list of counties in each of the water resource regions, and this was performed for the Committee by Francis J. Marschner, a consultant to the Agricultural Research Service, U.S. Department of Agriculture.

At the same time the initial studies were requested, each of the principal federal departments and agencies engaged in water resources activities was asked to provide the Committee with a statement of its interests, and to name a liaison officer to assist the Committee staff in working out the details of further studies which would be required by the Committee. In addition, the governor of each state was requested to provide the Committee with a statement of the water problems in his state and his views of what should be done toward the solution of those problems.

The Select Committee next met formally on July 9, 1959, at which time the progress to that date was discussed, and arrangements for carrying out the next stages of the Committee's work were approved. The Committee agreed that to the maximum extent practicable the services of the federal agencies would be used for the preparation of technical studies, and that contracts with non-governmental organizations and individuals would be used only to fill in where

the necessary studies and information could not be readily obtained from agency
sources.

At the same meeting, Dr. Luna B. Leopold, Chief of the Water Resources
Division, U.S. Geological Survey, presented a report to the Committee on
water use and availability in the United States. The charts and diagrams used
by Dr. Leopold were of such value to the members of the Committee that they
were ordered to be printed, as a committee print, for general distribution to
members of the Senate and others interested in the nation's water resources
problems. Each of the subsequent reports undertaken for the Committee was
printed in the same format, under the general title "Water Resources Activities
in the United States," making up a series of 32 committee prints documenting
the studies made by the Select Committee.

In three fields, the Select Committee sought the assistance of non-governmental
organizations or individuals in the preparation of background studies. It was anticipated that there might be considerable controversy over projection
of future power demands having a bearing on water requirements. Accordingly,
the Committee asked public and private power trade organizations to prepare
reports similar to that being prepared by the Federal Power Commission, so
that they would be available for comparative purposes. While there is con-
siderable variance among the projections, the effects on overall water supply
did not appear to have a significant bearing on the Committee's final recom-
mendations. Thus, no attempt was made to resolve the differences. All three
of the reports were printed, along with a staff report, which sheds some light
as to why there are differences in the projections of the role hydroelectric power
will play in meeting future requirements.

In the other two fields in which non-governmental advice was sought, the
Committee asked Dr. Abel Wolman to investigate and report on present and
prospective means for improved re-use of water, and Dr. Edward A. Ackerman
to analyze and report on the impact of new techniques for improving water
supply and use on integrated multi-purpose water development. These two re-
ports rounded out the background studies for the Committee's own work.

As the Committee's program began to take form, it was found that Resources
for the Future, a nonprofit research foundation affiliated with the Ford
Foundation, was planning to undertake a study of water supply-demand rela-
tionships in the United States. Resources for the Future had already made
arrangements for Dr. Nathaniel Wollman, of the Department of Economics of

35. S. Select Comm. on Nat'l Water Resources 1, 86th Cong., 1st Sess. (Comm. Print
1959).
36. S. Select Comm. on Nat'l Water Resources, 86th Cong (Comm. Prints 1-32 and
Index 1959-60).
37. S. Select Comm. on Nat'l Water Resources 30, 86th Cong., 2d Sess., Present and
Prospective Means for Improved Reuse of Water (Comm. Print 1960), and 31, The
Impact of New Techniques on Integrated Multiple-Purpose Water Development (Comm.
Print 1960).
the University of New Mexico, to work in Washington on the study during the period from July 1, 1959 to August 1, 1960, after which he would work at the University for about two years to complete a report. Aside from the time schedule, the objectives of Resources for the Future were very near those of the Select Committee. Therefore, it was possible to negotiate an agreement whereby Resources for the Future would prepare for the Committee an interim report on its overall project, meeting the Committee's specifications, in return for the Committee furnishing data and projections being developed by the federal agencies for each of the various purposes for which water is used. The agreement called for the preparation of a report on water supply-demand relationships in the various water resource regions of the United States to provide answers for the Committee on questions of how much, when, where, and how water resources should be developed; what levels of cost and expenditure are justifiable for future water development; and what are the economic limits of water development.

In effect, the staff assigned by Resources for the Future to the preparation of its report functioned in almost the same way as would additional members on the Committee staff. Thus it was possible to complete the Committee's assignment without further augmentation of its staff except for the services of an editor provided by the Legislative Reference Service of the Library of Congress, and a printing specialist provided by the Government Printing Office.

From time to time the Select Committee considered the establishment of subcommittees to assist in carrying out its work, but on each occasion the Committee rejected this idea. Thus its entire work was carried on under the direction of the chairman, with the participation of the full Committee.

A third formal meeting of the Select Committee was held on July 30, 1959, and the balance of the program of staff work was considered and approved. The Committee also discussed a tentative schedule of field hearings to be held in the fall. At this meeting the Committee heard a presentation by Walter Picton, Director of the Water and Sewerage Industries and Utilities Division, Business and Defense Services Administration, U.S. Department of Commerce, relative to estimates of capital investments in water resources facilities needed by 1975. At the Committee's request, Mr. Picton made an extension of his estimates to the year 1980, and this tabulation was later adopted for use in the Committee's own report. On the same day, Elmer B. Staats, Assistant Director of the Bureau of the Budget, discussed water resources development in relation to the federal budget.

The final formal meeting of the Select Committee during the first session of the 86th Congress, was held on August 18, 1959, at which time the Committee approved a schedule of field hearings for the fall and winter months.

and approved contracts for preparation of the reports by Dr. Ackerman and Dr. Wollman.

The Committee's field hearings began in North Dakota on October 7, 1959. Subsequently, the Committee went to Wyoming, Montana (2 hearings), Idaho, California (2 hearings), South Dakota (2 hearings), Michigan, Pennsylvania, Arkansas, Oklahoma, Louisiana, Florida, Maine, and Massachusetts before the end of the year. In 1960, additional hearings were held in Indiana, South Carolina, and in Washington, D.C. to give everyone who requested it an opportunity to be heard. The transcripts of all of the hearings were printed, with a separate volume for each state, and copies of the hearings were widely distributed. A great deal of the testimony was presented on behalf of specific project authorizations or appropriations, matters which were outside the scope of the Committee's authority. Aside from material in support of specific projects, the following suggestions were among those most frequently made: (1) the small watershed program of the Department of Agriculture, under Public Law 566, as amended, should be speeded up by making more funds and survey crews available, and should be liberalized by broadening the fields of benefits considered under the program; (2) the federal program of water pollution abatement grants should be expanded along the lines of the bill which had already passed the House and Senate and was then in conference between the two bodies; (3) a loan program for water supply facilities should be established by the federal government to enable municipalities to borrow money at favorable interest rates for construction of municipal and industrial water supply facilities; (4) research on all phases of water resources development should be stepped up; (5) the bill to establish a Council of Resources and Conservation Advisers in the Executive Office of the President, and a Joint Committee on Resources and Conservation in Congress should be enacted; (6) full consideration should be given to recreational benefits in planning of multiple-purpose developments; and (7) more adequate consideration should be given to fish and wildlife conservation in the planning of water resources projects.

The Indianapolis hearings attracted many statements in behalf of inland waterway navigation, with particular reference to the Ohio River. At the hearings in Washington, D.C. a number of suggestions on the broader aspects of water resources development policy were received. The printed hearings contained over 3,900 pages, and 972 witnesses were heard or permitted to file testimony, on subjects ranging from the use of atomic explosives for the creation or improvement of aquifers to dowsing as a means of locating underground water supplies.

40. See text at note 23, supra, for discussion of this bill, which was vetoed by the President in February 1960.
During the course of the hearings, members of the Committee were able to
discuss its work with representatives of a cross-section of public opinion, in-
cluding some of the nation's best-informed people on the subject of water re-
sources. Thus each senator who participated in the hearings was able to develop
a first-hand impression concerning the areas in the field of water resources
that required prime consideration.

Throughout the autumn of 1959 and the winter and spring of 1960, there
was frequent consultation among staff members of the Committee and Resources
for the Future and the federal agencies preparing studies for the Committee.
At least 150 federal employees were involved in this work, and there are many
others whose names were not furnished by their agencies.42 The Committee
recognized the need to make information on its work available to the public,
and prevailed upon Leonard W. Mosby, civilian chief of the Technical Liaison
Branch of the Corps of Engineers, Department of the Army, to assist the Com-
mittee staff in preparing press releases as the reports on the studies were com-
pleted and published.

One of the major problems was caused by the need to estimate water require-
ments for pollution abatement. The Public Health Service advised that a de-
tailed analysis of each stream was necessary to provide information on the
amount of water needed for dilution of the effluent from sewage and other
waste treatment plants. Even if a staff could be made available for this job, which
was doubtful, it would take several years to make the numerous analyses. Thus,
it would have been impossible to complete the water supply-demand study
without extending the life of the Committee.

George Reid, Professor of Civil Engineering at the University of Oklahoma,
a consultant to the Public Health Service, agreed to attempt a solution, and
the Public Health Service made his services available to the Committee. The
short-cut method43 which he developed for estimating dilution requirements
provided rough data that the Committee could use.

On January 31, 1960, the Select Committee's authorization to expend funds
under Senate Resolution 48 expired. Only about $44,500 of the funds provided
had been obligated. The program of studies was somewhat behind schedule, since
it had not been possible to complete the vast amount of work contemplated as
quickly as had been hoped. Only about one-third of the background material
sought by the Committee had been received and it appeared that a substantial
step-up in activity was necessary. Accordingly, additional funds in the amount of
$150,000 were requested for the full year ending January 31, 1961, in contem-
plation of increasing the staff and entering into additional research contracts
for analysis of data in order that the Committee's assignment could be completed

on schedule. The funds requested were provided by the adoption of Senate Resolution 210 of the 86th Congress, 2nd session.\textsuperscript{44}

By late spring, 1960, most of the studies being undertaken for the Committee had been received and made available to the consultants for study. Each study was quickly printed and given wide distribution, so that the Committee could profit by the feed-back of ideas thus stimulated. The Committee staff met with the consultants often as the studies were being completed, and in late May a preliminary draft summarizing the results of the studies then completed was prepared by the staff for submission to the Committee. Portions of this report were necessarily blank, as the over-all water supply-demand study was not yet completed, but it served to put the staff’s general ideas before the Committee.

The staff report was the basis for the Committee’s discussions at several meetings held during June 1960, and the members were asked to contribute their ideas for the final report of the Committee. At this point the session was interrupted for the presidential nominating conventions, and it was not until August 12, 1960, that the Committee was again able to meet and approve an outline for its final report. A subcommittee was authorized to meet and work on the report during the interim period prior to convening the 87th Congress. That subcommittee considered the draft which the staff had prepared in accordance with the Committee’s outline, and at a meeting held December 10, 1960, gave its directions for the preparation of the final Committee report. This was approved by the full Committee at its meeting held January 12, 1961, with additional changes of wording agreed to by the Committee. At that time, also, the Committee authorized printing of additional material that had been furnished in rebuttal to statements presented in the earlier hearings and in the committee prints, and that material was published as a committee print.\textsuperscript{45}

\textbf{THE COMMITTEE’S REPORT}

The Committee’s report was filed with the Senate by the chairman on January 30, 1961,\textsuperscript{46} one day before the date set by Senate Resolution 48 for the termination of the Committee’s existence. As printed,\textsuperscript{47} the report contains a 19-page summary, including the five major recommendations of the Committee, and a 52-page substantiating report of the background and reasoning leading to the recommendations. A summary of the activities and studies of the Committee, in 64 pages, is included; supplemental views contributed by four of the Senators, and additional views by one of the four, are appended at the conclusion, so that, in all, the report consists of 147 pages. 17 tables and 3 charts contribute to the understanding of the statistical information included.

\textsuperscript{44} Agreed to on Feb. 9, 1960, 106 Cong. Rec. 2322 (1960).
\textsuperscript{45} S. Select Comm. on Nat’l Water Resources, Supplemental Information on Subjects Covered by the Committee’s Studies, 87th Cong., 1st Sess. (Comm. Print 1961).
The basic premise upon which the Committee was formed recognized that legislative action could be taken only through the regular standing committees of the Senate. Thus, the Select Committee's five major recommendations were framed in general terms, and the Committee expressed the hope that appropriate legislation to implement the recommendations would be introduced in the Senate and considered by the appropriate committees.

The first recommendation called for the federal government, in cooperation with the states, to prepare and keep up-to-date plans for comprehensive water development and management of all major river basins of the United States, taking into account prospective demands for all purposes, giving full recognition to non-revenue yielding purposes (such as streamflow regulation, outdoor recreation, and preservation and propagation of fish and wildlife), and keeping in mind the ultimate needs for optimum development of all water resources and for considering all practicable means of meeting demands. The Committee suggested that the Executive Branch of the federal government submit plans to the Congress by January 1962 for undertaking and completing such studies in all basins by 1970.

Second, the Committee recommended that the federal government stimulate more active participation by the states in planning and undertaking water resources development and management activities. This would be accomplished by a ten-year program of federal grants to assist the states in river-basin planning, with a minimum of about $5 million in federal funds being made available annually for matching by the states in preparing the comprehensive plans contemplated by the first recommendation.

Third, the Committee recommended more effective and coordinated research and development programs of the federal government aimed both at increasing available water supplies and making more efficient use of existing supplies. It was thought that this would be accomplished primarily by giving more executive direction to the existing programs. The Committee further recommended expansion of basic research programs, a more balanced and better-constructed program of applied research for increasing water supplies, an expanded program of applied research for conservation and making better use of available water resources, and evaluation of completed projects with a view to making them more effective in meeting changing needs and providing better guidelines for future projects.

Again, the Committee suggested that the Executive Branch develop a coordinated program of research to meet these objectives and submit it to Congress in January 1962 so that it could be considered along with budget estimates for the next fiscal year.

The Committee's fourth recommendation was that a periodic assessment of water supply-demand relationships, somewhat along the lines of the Committee's own endeavor, should be made biennially for each of the water resource regions of the United States and submitted to the Congress by the Executive Branch of the government.
The fifth recommendation suggested steps to be taken by the federal government in connection with (a) regulation of flood plain use to reduce flood losses, and delineation of flood hazard areas; (b) more detailed studies of emerging water problems in areas in which water shortage is most apparent, with emphasis on minimizing adverse effects on the economy caused by water shortages; (c) a study of future needs for reservoir storage sites with a view to preventing their preemption by other developments; (d) holding of public hearings in connection with federal programs in order that the people affected may be more fully informed and that their desires may be more fully considered.

The philosophy behind the Committee's recommendations is discussed rather fully in the substantiating material of the report, and some specific recommendations for research programs are included. The report did not go so far as to recommend specific federal action programs, leaving this to be worked out by the appropriate committees of the Senate.

The supplemental views of Senators Clair Engle, Philip A. Hart, Gale W. McGee, and Frank E. Moss were presented to point out areas in which they believed major new action programs were needed. Their "supplemental views" conclude with an endorsement of the proposal for establishing a Council of Resources and Conservation Advisers in the Office of the President, as a means of making possible the accomplishment of necessary objectives in the field of water resources. The statement of the "individual views" of Senator Gale W. McGee discusses the relationship of water resources development to the strength of the nation and its ability to achieve its objectives in other fields, emphasizing the importance of water resources development in the West to our national growth. Thus, the "supplemental" and "individual" views do not appear to represent any fundamental difference of opinion among the members of the Committee regarding ultimate objectives, but rather, reflect the desire of some of the members to stress the urgency of immediate action and to make more specific recommendations as to programs than the Select Committee felt it was able to do.

The report, with its recommendations, appears to have been well received by the technical press. The Committee's achievement in accomplishing its mission and going out of business with such a small expenditure of funds has also received favorable commendation in the press. This was traceable to the almost unprecedented spirit of cooperation elicited by the Committee, which made it possible to complete work with the expenditure of only $44,370 for the period through January 31, 1960, and less than $50,000 in the full year ending January 31, 1961. In addition, of course, substantial amounts were expended on the Committee's work by Resources for the Future, by the federal agencies making the studies, and by the Government Printing Office. Mention should also be made of the fact that the consultants worked for the Committee for a nominal daily fee, far less than going rates of compensation for the high quality of professional services rendered.

SUBSEQUENT ACTION RELATED TO THE COMMITTEE'S REPORT

The Executive Branch of the government gave prompt recognition to the Committee's recommendations. On February 23, 1961, the President sent a message to the Congress concerning natural resources in which he made reference to "... the very excellent and timely report of the bipartisan Senate Select Committee on National Water Resources." The President's Message indicated that he was adopting many of the recommendations of the Select Committee.

With respect to Recommendation No. 1 of the Select Committee the President stated: "I urge the Congress to authorize the establishment of planning commissions for all major river basins where adequate coordinated plans are not already in existence." Subsequently, on July 13, 1961, the President submitted a draft of legislation to the Congress that included a proposal for accomplishing this step as its Title II. The bill was introduced by Senator Anderson on the following day.

The President's February Message on Natural Resources did not propose steps to implement the second recommendation of the Select Committee. Thereafter, bills for this purpose had been introduced by Senator Anderson, with 15 other sponsors, in the form of S. 1629, A BILL "To provide financial assistance to the States for comprehensive water resources planning," and by Senator Kerr for himself and Senator Case of South Dakota, in the form of S. 1778, A BILL "To promote State planning with respect to public works necessary for the conservation, development, and utilization of water resources." The two bills differed primarily in the naming of the agency which would administer the grant-in-aid program. S. 1629 would vest this function in the Secretary of the Interior, while S. 1778 would establish a Water Resources Planning Board to administer the program. A public hearing was held on Senator Anderson's bill on July 10, 1961 by the Senate Committee on Interior and Insular Affairs, at which time non-federal witnesses were heard. Before the positions of the federal agencies could be ascertained, the President's July 13th draft of legislation was received, and it included a provision to establish a program for financial assistance to the states for comprehensive planning, as its Title III.

The President's draft legislation also included as its Title I, provisions to establish a Water Resources Council to be composed of the Secretary of the Interior, the Secretary of Agriculture, the Secretary of the Army, and the Secretary of Health, Education, and Welfare. This Council, among its other duties, would administer the grant-in-aid program proposed for carrying out the Select

49. Ibid., at 3.
50. S. 2246, 87th Cong., 1st Sess. (1961), A BILL "To provide for the optimum development of the Nation's natural resources through the coordinated planning of water and related land resources, through the establishment of a Water Resources Council and river basin commissions, and by providing financial assistance to the States in order to increase State participation in such planning."
Committee’s second recommendation, and would “... maintain a continuing study of the adequacy of supplies of good quality water in each water resource region in the United States to meet the requirements of the region and the national interest therein, appraise the adequacy of existing policies and programs to meet such requirements, and make recommendations to the President with respect thereto.” Aside from its failure to call for submission of such studies to the Congress, this provision appears to encompass the intent of the Select Committee’s fourth recommendation.

Joint hearings were held on S. 2246 on July 26 and August 16, 1961, by the Committee on Interior and Insular Affairs and the Committee on Public Works, but no further action was taken. The bill will carry over into the second session of the 87th Congress, which began in January 1962.

The President’s proposed bill was introduced in the House of Representatives in two forms, H.R. 8177, by Congressman Aspinall, Chairman of the House Committee on Interior and Insular Affairs, and H.R. 8155, an amendment to the Rivers and Harbors and Flood Control Act of 1960, by Congressman Buckley, Chairman of the House Committee on Public Works. The two bills were referred, respectively, to the Interior and Insular Affairs Committee and the Public Works Committee, but no hearings were held during the first session of the 87th Congress.

Steps taken by the President, as announced in his Message on Natural Resources, indicate that the action contemplated by the third major recommendation of the Select Committee, calling for improvement of the national research program on water, is being taken. The President stated that “... to provide a coordinated framework for our research programs in this area, and to chart the course for the wisest and more efficient use of the research talent and facilities we possess, I shall ask the National Academy of Sciences to undertake a thorough and broadly based study and evaluation of the present state of research underlying the conservation, development, and use of natural resources, how they are formed, replenished, and may be substituted for, and giving particular attention to needs for basic research and to projects that will provide a better basis for natural resources planning and policy formulation. ...” The President also stated that he had “... directed my science advisor and the Federal Council for Science and Technology to review ongoing federal research activities in the field of natural resources and to determine ways to strengthen the total Government research effort relating to natural resources.” Both of these studies are under way at the time this paper is being prepared. Individual attention is being given to water resources research, and some of the most competent water resources scientists in the country are working with the Academy and the Federal Council to formulate

programs for water resource research. Thus it appears that the Committee's third recommendation is well on the way to being accomplished.

In the meantime, the Congress has already taken several actions in the field of water resources research that follow up on some of the specific recommendations for research programs. The Water Pollution Control amendments of 1961,\(^5\) include provisions which authorize a substantial increase in the water resources research program of the Public Health Service. The increases are for the purposes of developing better methods of treating municipal sewage and other waterborne wastes, of improving methods and procedures for identification and measurement of the effects of pollutants on water uses, and of devising methods and procedures for evaluating the effects on water quality and water uses of augmented streamflows for controlling water pollution not susceptible to other means of abatement. The act also authorizes additional research laboratories in the several areas of the United States, and $5 million annually for research on pollution abatement. Another part of this act calls for the Corps of Engineers, the Bureau of Reclamation, and other federal agencies surveying or planning for reservoirs, to consider the inclusion of storage for regulation of streamflow for the purpose of water quality control, but specifically provides that this is not to be provided as a substitute for adequate treatment or other methods of controlling water pollution at the source.

Congress also increased the program for research into means of purifying saline water. Public Law 87-295,\(^5\) approved on September 22, 1961, supplements the existing research program in this field by authorizing the Secretary of the Interior to establish and operate laboratory and testing facilities; and makes a total of $75 million available for appropriation through fiscal year 1967, almost a tenfold step-up of the research program that was authorized in 1952.\(^5\)

The four sub-parts of the Select Committee's fifth recommendation are suggestions for federal and state governmental action which do not require additional legislation at this time. Further action toward regulation of flood plain use (Recommendation 5(a)) will be dependent upon action by state and local governmental agencies. A basis for action by the federal government has already been provided under Section 206 of the Flood Control Act of 1960,\(^5\) which authorized the Chief of Army Engineers to disseminate information on flood hazards which could be useful to local agencies in planning to ameliorate flood damage. In addition, the Geological Survey is continuing and expanding its program of mapping for the delineation of flood hazard areas.

It would appear that the study of emerging water problems in areas where water shortage will be most acute by 1980, which is the subject of the Select

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Committee's recommendation 5(b), could be handled by an appropriate River Basin Planning Commission, established as contemplated under Title II of S. 2246.

Partial implementation of recommendation 5(c), calling for study of future needs for major water storage reservoirs for river regulation for all purposes, would be effected by adopting the recommendation made by the President in his Message on Natural Resources, in which he stated, "I urge the Congress to enact legislation permitting the reservation of known future reservoir sites by the operating agency whenever such protection is necessary." A draft bill for the implementation of this suggestion has not been submitted, and it is likely that the study contemplated by the Select Committee will be needed to provide a basis for considering such legislation. Accumulation of data on the needs for future reservoirs will be expedited to some extent by the previously mentioned authorization in the Water Pollution Control Act amendments of 1961 for consideration of streamflow regulation as one of the purposes of reservoir construction by Federal agencies.

Since all federal agencies have authority to provide for public hearings in connection with their programs, recommendation 5(d) could be placed in effect by administrative action. No reports have been received to indicate whether federal agencies have taken steps to increase the holding of public hearings, as desired by the Committee.

CONCLUSION

It is too soon to make an over-all evaluation of the impact of the Select Committee's work. It can be seen at this time that several of its recommendations on research have already been accepted by enactment of the Water Pollution Control amendments of 1961, and the legislation expanding the saline water conversion research program. A thorough study and evaluation of the nation's research program in the field of water resources is under way along the lines contemplated by the Committee. Most of the balance of the Committee's recommendations could be placed in effect by the enactment of a bill along the lines of S. 2246. However, the bill has not yet been passed, and it appears that a coordinated effort on the part of those concerned with all aspects of water resources development will be needed if it is to be enacted during the second session of the 87th Congress. The hearings have already indicated that there are numerous provisions in the bill which do not meet with the approval of many of the organizations that sent representatives to testify. Continued opposition and haggling over details could easily prevent the bill from becoming law. In endorsing the legislation, one unusually trenchant commentator stated,


... while every student has been aware of the major problems and needs [in the water resources field], each group has had its own thoughts on just what kind of organization might best accomplish the objective, and what means might be developed to stimulate participation of all levels of government. If we continue to emphasize the difference in approach and insist upon pride of authorship, we can continue to gather more reports for our libraries which will only support what we already know. Insistence that our differences shall prevail can only do the whole people a dis-service and jeopardize the national economy by failing to foster sound management and control of our water resources.

An effort to provide a single bill that would correct all of the conditions in our water resource development machinery that could stand improvement is too great a task to attempt at one time. But it is time for those who sincerely believe in improving the present machinery to work together to correct the major deficiencies and then later take care of the lesser problems, one or two at a time.69

The work of the Select Committee has aroused interest overseas. Commenting in "NATURE," W. G. V. Balchin, Lecturer in Geography at Kings College, London, made the following comment on the Select Committee:

Commendable foresight has been shown in the United States in the efforts being made to provide adequate water supplies for the next generation. Most countries, especially the United Kingdom and many members of the Commonwealth, will find the approach, the reports, the findings and the recommendations of the Senate Select Committee . . . of great value and interest to them in dealing with their own water problems.60

Already it can be seen that the Select Committee has exerted a considerable influence on the shaping of national water policy during the first session of the 87th Congress. At a later date it may be possible to more accurately assay the role played, from a better perspective.

The Select Committee itself was under no illusion that it could solve all of the nation's water resources problems for all time. At one of the early meetings, the Chairman, Senator Robert S. Kerr, realistically said, "... as tremendous as the problem is, I have no thought that we will encompass all of it, because we live in a dynamic environment, not a static one, and I am sure that if the future holds what I believe it will, although we may do the best job that any committee has ever done—and I have not the slightest doubt but what we will—the task ahead of us when the job is done will be far greater than the task which confronted us when we started."61

59. Ibid. at 145, statement of Charles D. Curran, P.E., for the National Society of Professional Engineers.
60. 191 Nature 446 (No. 4787, 1961).
61. From transcript of proceedings of Meeting of the S. Select Comm. on Nat'l Water Resources, July 9, 1959. (Unpublished data now in the Archives of the United States.)