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UPPER COLORADO RIVER COMMISSION

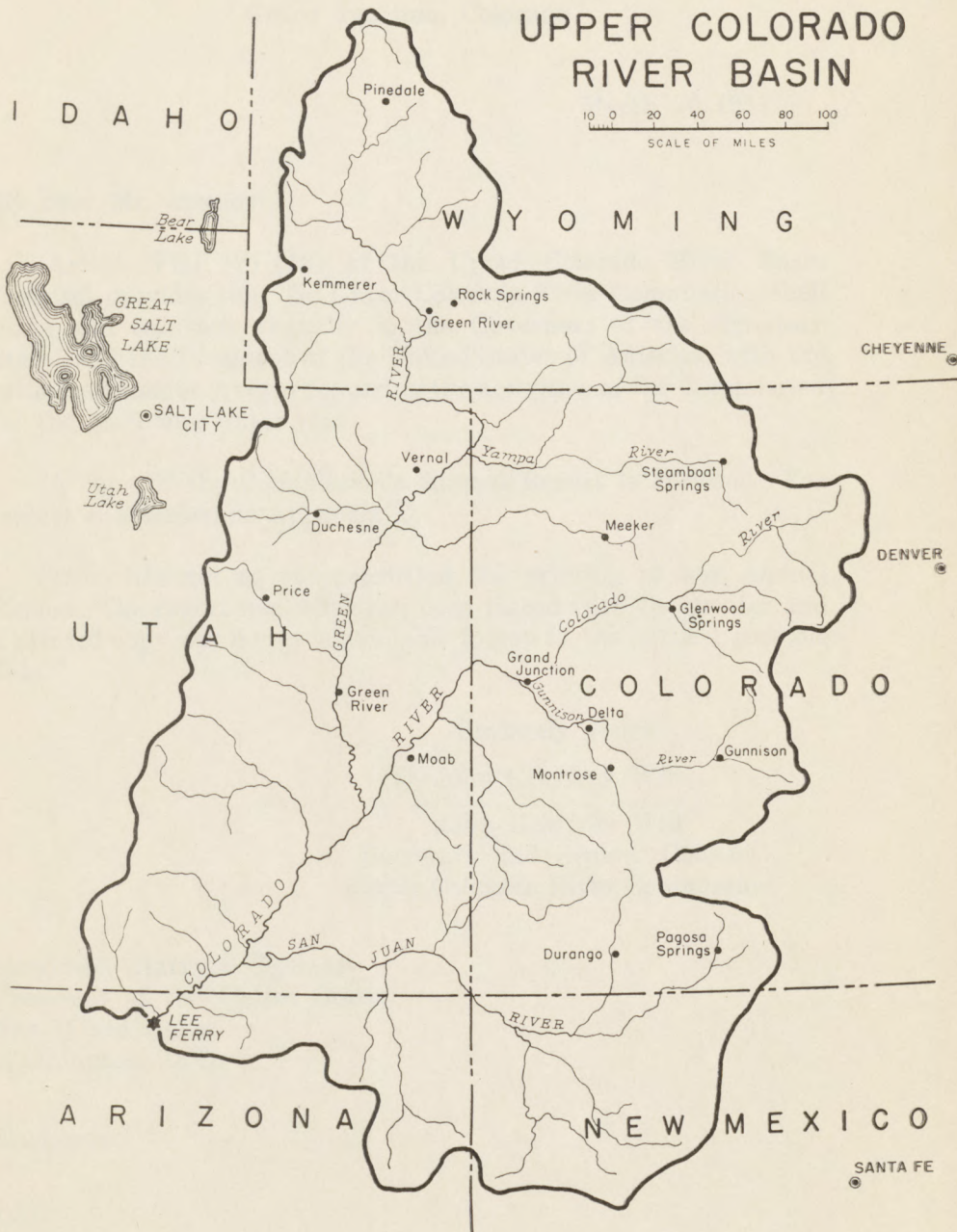
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SECOND ANNUAL REPORT

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MARCH 19, 1951

UPPER COLORADO RIVER BASIN



UPPER COLORADO RIVER COMMISSION

520 Rood Avenue

Grand Junction, Colorado

March 26, 1951

My dear Mr. President:

Article VIII (d) (13) of the Upper Colorado River Basin Compact provides that the Upper Colorado River Commission shall make and transmit annually to the Governors of the signatory States and the President of the United States of America, with the estimated budget, a report covering the activities of the Commission for the preceding water year.

A copy of the Commission's Annual Report is enclosed. The budget is attached as Appendix D.

Time has not as yet permitted the printing of our Annual Report. The report has, however, been placed with the printer and a printed copy will be made available to you at the earliest possible date.

Sincerely yours,

/s/ John Geoffrey Will

John Geoffrey Will
Secretary and General Counsel
Upper Colorado River Commission

Honorable Harry S. Truman
President of the United States
The White House
Washington, D. C.

Enclosure

LSB

This report was, on the same date, transmitted to the Governor of each Upper Basin State.

FRONTISPIECE

LETTER OF TRANSMITTAL

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SECOND ANNUAL REPORT

UPPER COLORADO RIVER COMMISSION

March 19, 1951

I. INTRODUCTION

Article VIII (d) (13) of the Upper Colorado River Basin Compact provides that the Upper Colorado River Commission shall "make and transmit annually to the Governors of the signatory States and the President of the United States of America, with the estimated budget, a report covering the activities of the Commission for the preceding water year."

Article VIII of the By-Laws of the Upper Colorado River Commission provides as follows:

1. The Commission shall make and transmit annually on or before April 1 to the Governors of the states signatory to the Upper Colorado River Basin Compact and to the President of the United States, a report covering the activities of the Commission for the water year ending the preceding September 30.

2. The annual report shall include among other things the following:

- (a) The estimated budget;
- (b) All hydrologic data which the Commission deems pertinent;
- (c) Estimates, if any, of the Commission forecasting water run-off;
- (d) Statements as to cooperative studies of water supplies made during the preceding water year;
- (e) All findings of fact made by the Commission during the preceding water year;
- (f) Such other pertinent matters as the Commission may require.

For data on the activities of the Commission during that part of the preceding water year to March 15, 1950, reference is hereby made to the Commission's First Annual Report. In order that a

more nearly recent account of the Commission's activities may be gained, the Commission has determined to include in this report an account of the activities of the Commission through March 15, 1951.

II. THE COMMISSION

The membership of the Upper Colorado River Commission remained unchanged from that listed in the First Annual Report until August 19, 1950, upon which date Honorable Joseph M. Tracy, having been theretofore duly appointed State Engineer of the State of Utah, following the resignation of Honorable Harold A. Linke, assumed office as Commissioner for Utah. As of the date of this report, the Commission consists of the following:

Harry W. Bashore	—Commissioner for the United States of America and Chairman of the Commission
Clifford H. Stone	—Commissioner for the State of Colorado and Vice-Chairman of the Commission
John H. Bliss	—Commissioner for the State of New Mexico
Joseph M. Tracy	—Commissioner for the State of Utah
L. C. Bishop	—Commissioner for the State of Wyoming

The following have acted as advisers for each Commissioner from time to time:

United States of America—

E. W. Fisher	—Legal Adviser*
T. Richard Witmer	—Legal Adviser
J. R. Riter	—Engineering Adviser

Colorado—

Jean S. Breitenstein	—Legal Adviser
Royce J. Tipton	—Engineering Adviser
Frank Merriell	—Engineering Adviser

*The Honorable Clifford E. Fix was Legal Adviser for the United States Commissioner until the time of his resignation as Chief Counsel of the Bureau of Reclamation. J. Stuart McMaster, Regional Counsel of the Bureau of Reclamation at Salt Lake City, Utah, has also acted as Legal Adviser to the United States Commissioner.

New Mexico—

Fred E. Wilson	—Legal Adviser
John R. Erickson	—Engineering Adviser
I. J. Coury	—Interstate Stream Commission

Utah—

Clinton D. Vernon	—Legal Adviser
C. O. Roskelley	—Engineering Adviser

Wyoming—

Norman B. Gray	—Legal Adviser
Austin P. Russell	—Engineering Adviser
Norman W. Barlow	—Adviser to Commissioner
Joe L. Budd	—Adviser to Commissioner
David P. Miller	—Adviser to Commissioner

III. THE STAFF

The staff of the Upper Colorado River Commission, as of the date of this report, consists of:

John Geoffrey Will, Secretary and General Counsel
Ralph D. Goodrich, Chief Engineer
Barney L. Whatley, Treasurer
Richard T. Counley, Assistant Treasurer
Mrs. Lois S. Burns, Secretary to Mr. Will
Miss Betty L. Anderson, Stenographer

IV. ACTIVITIES OF COMMISSION

During the period, March 15, 1950 to March 15, 1951, the Commission held five meetings, as follows:

March 20, 1950	—the Regular Meeting Grand Junction, Colorado
June 20, 1950	—a Special Meeting Cheyenne, Wyoming
Sept. 18, 1950	—the Annual Meeting Grand Junction, Colorado
Nov. 27, 1950	—a Special Meeting Denver, Colorado
Jan. 20, 1951	—a Special Meeting Denver, Colorado

During this period also there were meetings from time to time of the standing committees. These committees and their membership, during the past year, were as follows:

Engineering Committee—

J. R. Riter, Chairman	R. D. Goodrich*
John R. Erickson	H. T. Person
Royce J. Tipton	C. O. Roskelley
Frank Merriell	

Legal Committee—

Fred E. Wilson, Chairman	Norman B. Gray
Clinton D. Vernon	Frank Delaney

Budget Committee—

C. O. Roskelley, Chairman	J. R. Riter
John H. Bliss	Norman W. Barlow
Clifford H. Stone	

There were meetings also of the following special committees:

Committee on Rules and Regulations—

Clinton D. Vernon, Chairman	Fred Wilson
Jean S. Breitenstein	J. R. Riter
Austin P. Russell	

Committee for Analysis of the Report of the Basin Development Committee to the 19th Annual Meeting of the National Reclamation Association—

Clinton D. Vernon, Chairman	Fred Wilson
Jean S. Breitenstein	J. S. McMaster
Norman W. Barlow	(See Appendix A)

Finance Committee—

C. O. Roskelley, Chairman	John H. Bliss
Norman W. Barlow	

*Mr. Goodrich was appointed to the Engineering Committee while acting as Adviser for one of the States but ceased to be a regular member of the Engineering Committee when appointed Chief Engineer of the Commission. Mr. Austin P. Russell now represents Wyoming on this committee.

The mere statement that these committees met in order to carry on the work of the Commission hardly does justice to their conscientious efforts in carrying out their assignments. Often problems arise during the deliberations of the committees requiring extended studies and special reports by sub-committees as well as research and investigation by individual members and advisers before final reports can be submitted.

Among the principal activities of the Commission during the period covered by this report, were the collection and consideration of evidence on the subject of the proposed Echo Park dam and reservoir and Split Mountain dam, and the prospective effect thereof on the Dinosaur National Monument, the adoption of a resolution urging that the Secretary of the Interior recommend their authorization as a part of the initial stage of the Colorado River Storage project; the consideration and approval of the presentation to the President's Water Resources Policy Commission of views on national water resources policy (See Appendix B); the consideration and adoption of an engineering program (See Appendix C); the consideration and adoption of budgets for the fiscal years ending June 30, 1952 and June 30, 1953, respectively (See Appendix D); and the consideration and adoption of several amendments of the Commission's By-Laws (See Appendix E). The Commission also gave preliminary consideration to rules and regulations for further implementation of the Commission's administrative procedures.

V. STAFF ACTIVITIES

In addition to the performance of routine duties, the Commission's staff has been engaged, during the period covered by this report, in the following principal activities. The preparation and submittal to the Commission and, thereafter to the President's Water Resources Policy Commission of views on national water resources policy; the preparation and presentation before the Secretary of the Interior of the case for authorization of the Echo Park dam and reservoir and the Split Mountain dam; the carrying on of a public relations program designed to acquaint the public, and the executive and legislative branches of Federal and State government, with the nature, objectives and policies of the Upper Colorado River Commission (to which end the Commission's Secretary and General Counsel has made eight formal addresses and several informal talks in various parts of the Basin, and the Commission's Chief Engineer has attended a number of meetings of engineering and learned societies); and the scrutiny of proposed Federal legis-

lation that might affect Upper Basin development and discussions thereof with members of Congress and officials in the Executive Branch of the Federal Government. Eleven reports have been made of engineering conventions, conferences and inspections by the Chief Engineer to the Commission, while a number of others were recorded during the past year as Office Memoranda to the Secretary. The Commission's staff has been engaged also in activities the results of which are hereinafter described under the heading "Hydrology."

VI. HYDROLOGY

Collection of hydrologic data has continued and the amount secured has increased through the cooperation of the U. S. Geological Survey and the Bureau of Reclamation of the Department of the Interior, as well as the interested departments of the government of each of the Upper Basin States.

The table of Key Gaging Stations in the First Annual Report is included in this Report as Appendix G, but it has been enlarged to include all the stations listed in the program recommended by the Engineering Advisory Committee to the Upper Colorado River Basin Compact Commission and accepted by the Upper Colorado River Commission at the meeting of March 20, 1950. The values of the average annual flows at these stations have been computed to include the water year ending September 30, 1948. This latter date is the approximate date of the Final Report of the Engineering Advisory Committee to the Upper Colorado River Basin Compact Commission. Since it has not been possible, nor practical, to extend all these discharge records back to include the year 1914, the period covered by the average as computed is given, as well as the area of each drainage basin. Most of the averages given as from 1914 are from the Final Report above mentioned. The total discharges for each of the water years 1949 and 1950 are also given. The records for the gaging station on the Piedra River at Arboles, Colorado, have been omitted from this table, since its operation has been discontinued and it was not included with those adopted by the Commission.

It has not been possible as yet to make any independent estimate of the probable water supply of the Upper Colorado River Basin for the water year ending September 30, 1951. Records, papers and discussions to aid in studies for this purpose are being collected, however. Among these is the "Water Resources Review" published monthly by the U. S. Department of the Interior, Water Resources Division, covering the entire country. The most recent

ones available are for January and February, 1951. The only reference in the January number as to conditions in any part of the Upper Colorado River Basin refers to eastern Utah, and states that, "The stream-flow pattern remained almost the same (for January) as in December; flow of Green River at Green River decreased but continued excessive."

The February issue gives some additional information including for Utah that the "San Juan River near Bluff was record low for February." As to conditions in the Green River Basin in Wyoming, their report indicates that "Ground water levels were usually above normal" and that "Runoff was near normal as above." The Colorado paragraph reads, in part: "Runoff and snow pack continue to be above normal in northern Colorado, but are about normal in central part, Roaring Fork at Glenwood Springs, in Colorado River Basin, rose above normal. Apparently the only areas where runoff is seriously deficient are the Rio Grande and San Juan River Basins and possibly the southern part of Arkansas River Basin."

The following statement applies to the south portion of the Upper Basin and to the Lower Basin generally:

"In the southwest, the serious drought continues with little change; runoff in parts of Upper Colorado River Basin increased somewhat bringing total runoff at Lees Ferry up to normal; flow at Grand Canyon remained at 96 percent of normal. In New Mexico, Arizona, and southern California, the drought seems to have become more severe as there was a substantial decrease in runoff with respect to normal at all key gaging stations, and new February lows were reached at nine key observation wells, most of which are in heavily pumped areas."

Monthly reports are also received from the District Office of the U. S. Geological Survey at Tucson, Arizona, which give the daily discharges for the Colorado and Paria Rivers at Lees Ferry. These reports show that the discharge at the Compact Point of Lee Ferry for the winter months of the current water year was as follows:

October, 1950	342,000	acre-feet
November, 1950	351,700	" "
December, 1950	416,400	" "
January, 1951	317,800	" "
February, 1951	362,200	" "
	<hr/>	
	1,790,000	" "

The average five months' winter flow at Lee Ferry for the period 1914 through 1947 is over 2,120,000 acre-feet, which shows that the above flow of 1,790,000 acre-feet is only about 85% of the average as computed for the Commission. It appears evident that the discharge of the Colorado River for this year will be below average unless the spring runoff from the melting of snow is better than average.

Another cooperating agency is the Division of Irrigation of the Soil Conservation Service of the U. S. Department of Agriculture. Its reports of Snow Surveys and Irrigation Water Forecasts, received from the Colorado Experiment Station at Fort Collins, are a valuable addition to our records; and the following general statement of conditions for the Colorado River Drainage Basin is quoted from its report as of March 1, 1951:

"Snow accumulation on the headwaters of the Colorado River in Wyoming and Colorado is generally above average for March 1 and considerable above this date in 1950. Snow cover is well above normal on the headwaters of the Green in Wyoming and on the source of the Colorado and Gunnison Rivers in Colorado. Elsewhere in Colorado snow cover is normal or slightly below normal. On New Mexico tributaries snow fall has been deficient. Soil moisture conditions are reported as fair to good in Wyoming and Colorado except for the extreme southwest section of Colorado.

"The snow cover at high elevations in Arizona continues to be extremely deficient. Stream flow is below normal and reservoir storage is at minimum levels."

The following details are also from this report: On the Green River watershed in Wyoming, the snow cover is reported as 155% of normal compared with 125% last year. The snow is reported to be from 140% to 160% of normal on the Upper Colorado, Blue and Eagle Rivers and about 145% on Roaring Fork. The Upper Gunnison River watershed is also said to have above normal snow pack but with less than average snow at lower elevations.

On several of the larger tributaries, the Little Snake, Yampa, White and the Upper Dolores, the snow fall was about average; but on the San Juan Basin, it was only about 75% of normal. These

reports from the Fort Collins Experiment Station do not include snow measurements in Utah.

A third source of information on conditions during the late winter and early spring is found in the series of bulletins issued from the Kansas City Office of the U. S. Weather Bureau in their "Water Supply Forecasts for the Western United States."

The following general statements are quoted in full from the issue of March 1, 1951:

"Colorado River above Cisco: During the past month, precipitation over the Uncompahgre and Dolores River drainages averaged slightly below normal at the higher elevation and much below normal at valley stations. Elsewhere in the basin the monthly precipitation amounts were near normal. The water-supply outlook for the Colorado and its tributaries above Cameo is good; with near-normal precipitation for the balance of the season, 110% to 125% of normal runoff is expected. The outlook for the Gunnison River Basin, excluding the Taylor River drainage, is for flows of 75% to 85% of normal, while in the Dolores River Basin flows are expected to range from 50% to 70% of normal.

"Green River Basin: Near-normal precipitation during February was reported for the Big Piney country in Wyoming and for the Steamboat Springs area in Colorado. Less fortunate were the Little Snake watershed and the drainage areas in Utah, where precipitation for the month was less than half of normal. The water-supply outlook for the drainage areas in Wyoming and Colorado is good; for the Utah portion of the basin, less favorable. With near-normal March through June precipitation, normal flows may be expected for the Duchesne River; 60% to 70% of normal flows for the other Utah tributaries.

"San Juan River Basin: Precipitation during February averaged 70% of normal over the higher elevations of the San Juan Mountains and only 30% of normal over the lower slopes. Water-supply forecasts are 5% to 12% lower than those

issued a month ago. The current outlook, assuming that the precipitation for the balance of the season will be near normal, is for flows of 60% of normal."

As to a specific forecast for Lees Ferry for the water-year 1950-51, the discharge of the Colorado River is estimated at 10,400,000 acre-feet, which is given as 95% of normal. The flow of 11,000,000 acre-feet tabulated as normal was obtained by adjusting the average discharge for the period 1920-44, while the average discharge, as computed by the Commission's Engineering Advisory Committee, adjusted for the period 1914-48, is 13,600,000 acre-feet. With this base the Weather Bureau's estimate is only 76½% of this long time average.

Among other sources of similar information is the report prepared by the Chief Engineer of the Colorado River Water Conservation District. While this report does not give quantitative estimates of seasonal runoff, it does give general forecasts for smaller subdivisions of the Western Slope areas of the Upper Colorado River Basin.

Progress has been reported in the preparation of the Interstate Priority Schedule required by Article XI (a) (2) but it is not completed.

Procedures for applying the Inflow-Outflow Method to the determination of stream discharge and man-made depletion of flow at Lee Ferry and at State Lines have been given intensive study for the past three months or more.

Excellent progress has also been made by the U. S. Geological Survey in the reestablishing of gaging stations requested by the Commission and in the construction of the additional stations needed for future administrative purposes, especially at State Line locations. The following quotations from letters submitted by District Engineers of the U. S. Geological Survey show the present status of this work and their energy and cooperation in the prosecution of this very necessary program:

From Denver, Mr. Francis M. Bell reports as follows:

" . . . we received sufficient funds to establish all the new stations recommended by the Compact Commission. Because of the late date at

which the funds were received it may not be possible to establish all the stations this fiscal year, but we will make every effort to do so. We have purchased all essential material including the recording instruments themselves and anticipate no further difficulties in obtaining materials. The exact status of the program at the present is as follows: In Wyoming sites have been selected for the stations at Green River, Hams Fork above irrigation and Fontenelle Creek above irrigation. Materials have been delivered to the latter two sites but heavy snow prevented the completion of the stations prior to winter weather. We expect that these three stations will be installed and in operation by the end of May. As yet no work has been done on the proposed station on Pine Creek below Fremont lake, but we are also hopeful that this station will be completed in May or June. In Colorado we have reestablished the station on Little Snake River near Slater in a temporary structure which will be replaced with a permanent one as soon as weather permits. We have also reestablished the station on McElmo Creek near Cortez, and it has been in operation for several months. Stations on Mancos River at Towaoc and McElmo Creek at State Line are essentially complete and should go into operation within the next week or two. No work has been done on the Snake River at Montezuma site nor have we as yet made a definite selection for the Ruby Canyon station. Despite this, we are hopeful that both these stations can be installed within the next few months. Locations have been selected on both the North and South Forks of White River near Buford, and materials are being assembled for shipment to the locations.

"In addition to the construction of new stations we have made numerous improvements to several of the existing stations and have purchased additional stream-gaging equipment and increased personnel in order that we may obtain more frequent measurements during the high water period. The additional personnel has also been quite useful in working up records for the water year 1950. We are somewhat ahead of our

normal schedule of computing Colorado River Basin records and expect to have records available for essentially every station in the Basin before the end of March."

Mr. M. T. Wilson, of Salt Lake City, lists the gaging stations in his district, which are in the Upper Colorado River Basin, including the three new ones given below and makes the following statement:

New Upper Colorado River Compact gaging stations

Dolores River near Cisco, Utah
Escalante River at mouth near Escalante,
Utah
Green River near Greendale, Utah

"It will be noted that there are only three new gaging stations in the Salt Lake City area. These have already been constructed and are now in operation. Enclosed are advance station descriptions giving the date of establishment and exact land location.

"In addition to the stations listed above, the State of Utah, in cooperation with the Geological Survey, has established about 100 new stations in the Colorado River Basin during the past three years. Records from many of those stations will be satisfactory for index inflow stations or outflow stations for determining consumptive use of water in the smaller irrigated areas or tributary streams. Of course, these records will also be available to the Commission when desired."

Lastly, from Santa Fe Mr. Berkeley Johnson writes the following:

"They (new stations) were two in number as listed, namely the Los Pinos River at the Colorado-New Mexico State Line and the Bloomfield canal diverting around the gage on the San Juan River near Blanco.

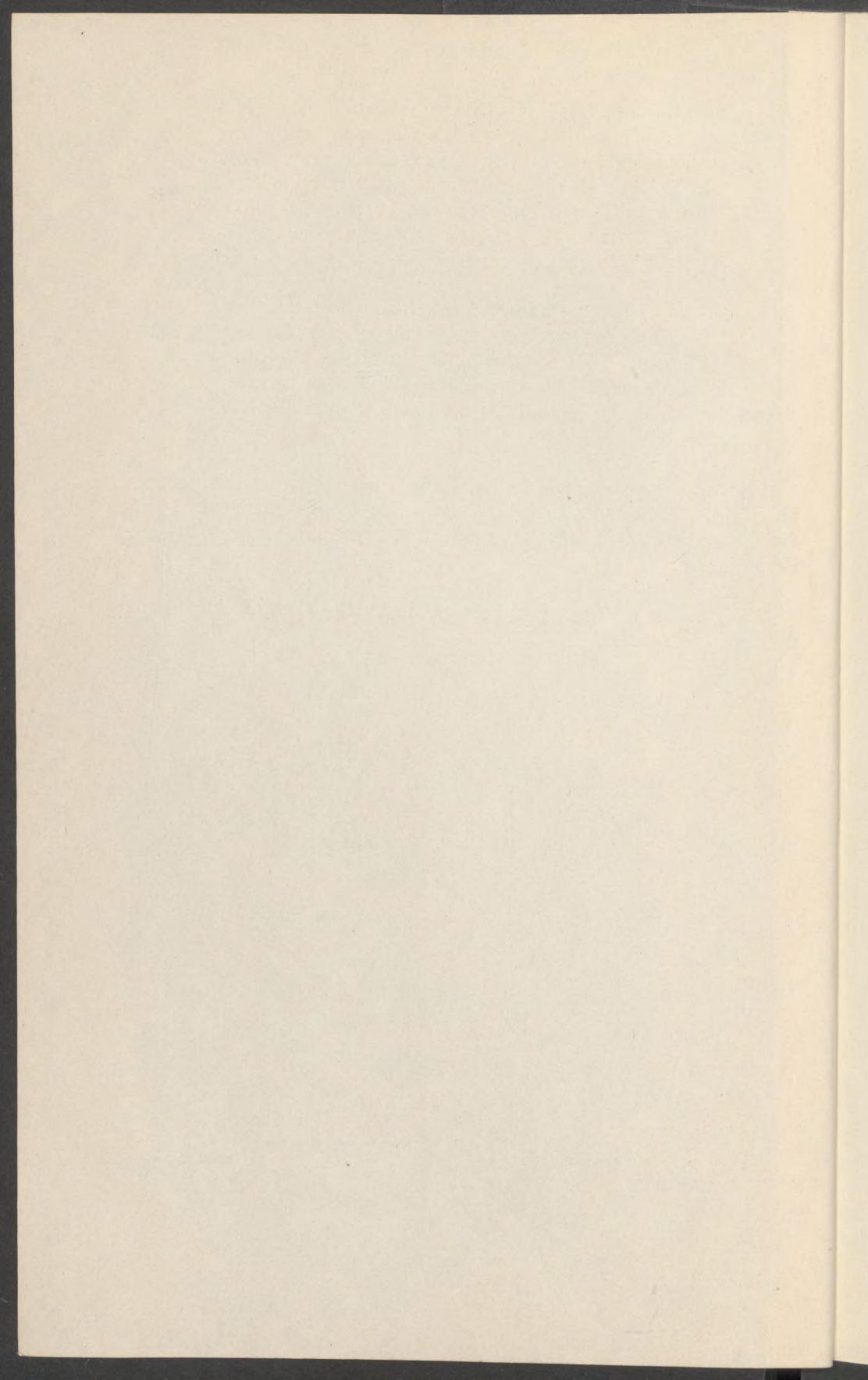
"To get the record for the inflow from the Los Pinos at the State Line, we installed two stations

as follows: Los Pinos River at Colorado-New Mexico State Line near La Boca, Colorado (started in operation January 22, 1951) and Spring Creek at Colorado-New Mexico State line near La Boca, Colorado (started in operation January 22, 1951). Two stations were required to obtain better accuracy and gaging conditions.

"The true name of the Bloomfield canal diverting around the Blanco river gage is Citizens ditch near Turley, New Mexico. It was reestablished on February 20, 1951, having been operated during the period April 15 to September 30, 1938."

Several special hydrologic studies are in the initial stages only, and will be reported when results have been obtained of sufficient value to justify discussion and possible action by the Commission.

No findings of fact had been made by the Commission to the date of this report.



APPENDIX A

COMMENTS ON THE REPORT OF THE BASIN DEVELOPMENT COMMITTEE TO THE NATIONAL RECLAMATION ASSOCIATION AT ITS NINETEENTH ANNUAL MEETING IN SPOKANE, WASHINGTON NOVEMBER 15-17, 1950

Introduction

Harry E. Polk, president of the National Reclamation Association, in February, 1950, established The Basin Development Committee and assigned to it the task of developing "a program or a plan for river basin development, in all its phases, which would be acceptable to the reclamation interests of the West" and of making recommendations "in direct and concrete form." This Committee made its report to the 19th annual meeting of the Association in Spokane, Washington. By its Resolution No. 1 adopted at the Spokane meeting, the Association resolved:

"1. That the Association approves the broad general objectives laid down in the report of the Basin Development Committee as indicated by the preamble of this Resolution;

"2. That the Association deems it essential that the trend toward Federal domination be reversed;

"3. That the Basin Development Committee report be transmitted to each of the 17 affected States, and interested organizations and agencies, and the interested Federal agencies for study, review, and comment within a time fixed by the Board of Directors;

"4. That the comments of such states, organizations and agencies be studied and analyzed by the Board of Directors, and that its analysis and recommendations be submitted to the 20th Annual meeting of the National Reclamation Association."

Herein, for purposes of brevity, the National Reclamation Association will be referred to as "Association," the Basin Develop-

ment Committee as "Committee," and the report of the Basin Development Committee as "Report."

The Form and Scope of the Report

Preliminary to any discussion of the fundamental matters included within the Report, consideration must be given to the form and scope of the Report. This is necessary because the Report is a most unusual document. With beautiful diction and in the rhetorical style of a propagandist the Report emphasizes an idea and minimizes the means to be employed to carry that idea into effect. The Report is not of the type which one would expect on a subject which has the political, economic, engineering, and legal complications incident to the development of the waters of our western streams. Except for one footnote referring to resolutions previously adopted by the Association, there is no supporting reference to any authorities, sources, or precedents. This lack of citation may not be attributed to any lack of material on the subject. During the period which has elapsed since President Theodore Roosevelt declared to Congress that "the development of our waterways involves many other important water problems, all of which should be considered as a part of the same general scheme"⁽¹⁾ and urged the establishment of "a permanent commission authorized to coordinate the work of all Government departments relating to waterways, and to frame and supervise the execution of a comprehensive plan,"⁽²⁾ there has accumulated a mass of material dealing with related problems of water development and governmental control of that development. The Association has published an authoritative and oft quoted report dealing with important aspects of the over-all problem.⁽³⁾ There are available the records of compact negotiations in which practical men considered basin development policies in a practical manner with a minimum of direction from the national government.⁽⁴⁾ There are published reports from federal agencies such as the Department of the Interior, the Corps of

(1) Richardson, Messages and Papers of the Presidents (1910) pp. 7474-75.

(2) *Id.* at p. 7604.

(3) "Preservation of Integrity of State Water Laws," (Oct. 1943) prepared by committee appointed pursuant to Resolution No. 9 adopted at 1942 annual meeting.

(4) Record of Arkansas River Compact Commission; Record of Upper Colorado River Basin Compact Commission. The minutes of the first eighteen sessions of the Colorado River Compact Commission are available.

Engineers, and the National Resources Planning Board,⁽⁵⁾ in addition to a multiplicity of reports of state officials and boards.⁽⁶⁾

The complete lack of reference to any of such material leads to a certain skepticism that the Committee actually made "an exhaustive study of all techniques, existing and proposed, for handling the complex problems relating to such development."

The objective of the report appears to be the popularization of a slogan, M.O.L., The Man on the Land. That slogan is seemingly intended to be the battle cry of a movement which has as its purpose the establishment of complete ownership and control of water use projects by quasi-public and municipal entities which are not fully representative of the people and which operate on a new level of government. An acceptance of the premise that local self-government is desirable does not carry with it the conclusion that local self-government can be obtained through a mere slogan. Secretary of Interior Ickes has warned that problems of regional development cannot be solved "merely by lighting a candle and intoning 'T.V.A., T.V.A., T.V.A.'"⁽⁷⁾ The incantation of M.O.L. would be just as ineffective.

The scope of the Report is disappointing in that it fails to outline with clarity the means through which the desired changes in water development techniques would be attained. The difficulty appears to arise in part at least from a lack of consideration of the fundamental constitutional and statutory law, both federal and

(5) Department of the Interior, Reclamation Handbook (1942); Department of the Interior, The Bureau of Reclamation, Its Functions and Accomplishments (1927); Bureau of Reclamation, The Place of Hydroelectric Power in Reclamation (1940); Nat. Resources Com., Regional Factors in National Planning and Development (1935); Nat. Resources Com., Drainage Basin Problems and Programs (1937); U. S. Atty.-Gen. Com. on Administrative Procedure, Report, Dept. of War (1940); Institute for Government Research, The Office of the Chief of Engineers of the Army (1923); Nat. Resources Com., Federal Agencies concerned with Water Use and Control (1936).

(6) See various annual reports of state engineers, state and local water boards, Upper Colorado River Commission, Arkansas River Compact Commission, and Interstate Commission on the Delaware River Basin. The 1946 compilation of the Colorado Water Conservation Board entitled "Interstate Compacts—A Compilation of Articles and Documents" contains a helpful bibliography.

(7) As reported in "The Transplantability of the TVA" by Pritchett, Iowa Law Review, Jan. 1947, p. 327.

state, relating to water. The illogically developed means suggested for the implementation of the M.O.L. idea most obviously would require constitutional and statutory changes. There is, of course, no assurance that such changes would improve existing conditions. The wisdom contained in three-fourths of a century development of western water law should not be carelessly discarded. Development of the water resources must take place within the existing legal framework, unless we are willing to forego such development while we endeavor to remake the basic law of the nation and the seventeen western states so far as the acquisition, disposition and administration of rights to the use of water are concerned.

The Idea

The authors of the Report characterize it as an appeal "to reverse the trend that is taking control and authority from the local projects of reclamation and making the United States government the proprietor and total authority."

Thus it becomes essential to analyze the Report from the standpoint of the idea which it endeavors to sell as well as from the standpoint of the means which are suggested to effectuate the idea.

When the Report is stripped of the verbiage which beclouds and confuses its substance, it is apparent that two premises have been accepted, viz.: (1) The federal government has wrongfully usurped, or attempted to usurp, complete governmental and proprietary control over reclamation projects, and (2) these functions are better exercised by the "Man on the Land" through districts organized under state law. From these premises the conclusion is drawn that reclamation projects should be planned, authorized, administered, and owned (at least after repayment to the federal treasury) by local districts or some nebulous organizations of local districts brought into being through interstate compacts in those instances where interstate streams are concerned. If the premises fail, then the conclusion falls with them. Accordingly, let us take a look at the facts.

In the seventeen western states making up the Association, water is the limiting factor in the development of the economy. This was true in the days when those territories were taken over by the United States by cessions from France, Spain, Mexico, Great Britain, and Texas. By reason of these territorial cessions the United States became the owner and proprietor of all land except those exceedingly small areas which were then in private owner-

ship.⁽⁸⁾ The United States likewise, except for Texas, exercised governmental control until states were individually admitted into the Union. When the states were admitted, the United States, except in the instance of Texas, retained proprietary ownership of the public lands. This meant that while states are in theory on an equality,⁽⁹⁾ in actuality the public land states of the west were less favorably situated than were other states where proprietary land ownership was not in the United States.

Under the circumstances the United States acted with wisdom and considerable generosity. The land acquisition laws⁽¹⁰⁾ and the mining laws⁽¹¹⁾ were liberal and proved a strong incentive to individual effort. So far as water is concerned the effect of the acts of 1866,⁽¹²⁾ 1870,⁽¹³⁾ and 1877⁽¹⁴⁾ was to dedicate the use of the waters of the streams to the public.⁽¹⁵⁾ To assist the settlers the size of homesteads was increased. As an incentive to state action in reclamation matters the Carey Act was passed in 1894.⁽¹⁶⁾

At the insistence of the West, Congress in 1902 enacted the Reclamation Law.⁽¹⁷⁾ Therein the rights of the states were carefully safeguarded by the provisions of Section 8⁽¹⁸⁾ which expressly stated that the law was not intended to affect the laws of any state relating to the control, appropriation, use or distribution of water used in irrigation and the Secretary of the Interior was directed to proceed in conformity with such state laws.

Under the original Reclamation Act the Secretary of the Interior contracted directly with the land owners.⁽¹⁹⁾ This was

(8) See *Neb. v. Wyo.*, 325 US 589, 611.

(9) *Coyle v. Smith*, 221 US 559.

(10) 43 USCA 161, 311, 321.

(11) 30 USCA 21 et seq and 71 et seq.

(12) Act of July 26, 1866, 14 Stat. 251.

(13) Act of July 9, 1870, 16 Stat. 217.

(14) Desert Land Law, Act of Mar. 3, 1877, 19 Stat. 377, 43 USCA 321 et seq.

(15) *California-Oregon P. Co. v. Beaver Portland Cement Co.*, 295 US 142; *Ickes v. Fox*, 300 US 82; *Brush v. Commissioner*, 300 US 352.

(16) Act of Aug. 18, 1894, 28 Stat. 422, 43 USCA 641 et seq.

(17) Act of June 17, 1902, 32 Stat. 388, 43 USCA 371 et seq.

(18) 43 USCA 372, 383.

(19) Act of 1902, Secs. 4 and 5.

modified to permit contracts to be made with irrigation districts.⁽²⁰⁾ The law now requires repayment contracts with an "organization, satisfactory in form and powers to the Secretary."⁽²¹⁾

It is not accurate to say, as does the Report, that in the early stages little attention was paid to power generation because of a fear that power development would encroach upon irrigation and domestic uses. The first federal act recognizing power development on reclamation projects was passed in 1906⁽²²⁾ and numerous other statutes have been enacted since that date. The attitude of the Congress is well expressed in the Reclamation Project Act of 1939, wherein it is provided:⁽²³⁾

"No contract relating to municipal water supply or miscellaneous purposes or to electric power or power privileges shall be made unless, in the judgment of the Secretary, it will not impair the efficiency of the project for irrigation purposes."

Thus, we have in existing federal law a clear recognition that irrigation uses are paramount. By constitution, statute, and interstate compact many of the western states have subordinated power and industrial uses to agricultural and domestic uses.⁽²⁴⁾

The theme song of the Report is that there must be a change in direction "from the grass roots up, rather than from a paternal and regimenting bureaucracy down." The implication is that under existing conditions the Man on the Land has nothing to say about these projects which are forced onto him by a dictatorial government. This is contrary to the facts. By the 1944 Flood Control Act both the Chief of Engineers and the Secretary of the Interior are required to submit each proposed water project report to each

(20) Act of August 13, 1914, Sec. 7, 38 Stat. 686, 688, 43 USCA 477.

(21) Reclamation Project Act, 1939, Act of Aug. 4, 1939, Sec. 9 (d), 43 USCA 387. See also Act of May 25, 1926, Sec. 46, 43 USCA 423.

(22) Act of April 16, 1906, Sec. 5, 34 Stat. 117.

(23) Act of August 4, 1939, Sec. 9 (c).

(24) Arizona, Rev. Code 1928, Sec. 3285; California, Water Commission Act, Sec. 15; Colorado, Const. Art. XVI, Sec. 6; Idaho, Const. Art. XV, Sec. 3; Kansas, General Stats. (1935) 42-301; Nebraska, Const. Art. XV, Sec. 6; Oregon, Code 1930 and Supp. 1935, 47-1043; Utah, Sec. 100-3-21 Utah Code Ann. 1943; Wyoming, Rev. Stat. (1931) 122-402; Colorado River Compact, Art. II (h) and IV (b); Upper Colorado River Basin Compact, Art. II (m) and Art. XV.

affected state.⁽²⁵⁾ The states then have within ninety days from the receipt of the proposed report to submit their written views and recommendations. These views and recommendations of the states must be then submitted to Congress together with the report. It is provided that the "relations of the Chief of Engineers and the Secretary of the Interior shall be with the Governor of the State or such official or agency of the State as the Governor may designate."⁽²⁶⁾ Thus, the Man on the Land has the right to have his duly chosen state officials take a look at every project report.

The only concrete evidence of the so-called trend has been the thus far abortive attempts to extend the Valley Authority principle to western streams. Valley Authority bills introduced in Congress have been consistently opposed by the Association and by an overwhelming majority of the officials and congressional delegations of the western states. No Valley Authority bill has yet been favorably reported by a congressional committee with the lone exception of TVA. At the moment, the Valley Authority movement is quiescent. It would seem that this is a good time to apply the wisdom of the old maxim that one should let a sleeping dog lie.

The second major premise of the Report is that the functions of initiating, investigating, planning, constructing, and administering water projects are best exercised by the Man on the Land through districts, associations of districts, and interstate organizations.

The enterprise, energy, and initiative of the pioneers who built up the West may not be discounted. At the same time it must be recognized that those same pioneers discovered many years ago that water problems may not be satisfactorily solved on an individual basis. Direct flow rights because of their variability were found inadequate many years ago to sustain any substantial successful agriculture. Storage reservoirs were needed to supplement the direct flow. These reservoirs could serve many individuals and required financing beyond the ability of one or two individuals. Corporations of various types were created to construct facilities to increase the availability of water. Later many irrigation districts were set up under state laws patterned after the Wright Act of California.⁽²⁷⁾ The projects easy and cheap to construct were all built many years ago. The cost of projects became so great that the federal government became the only possible financing agent.

(25) Act of Dec. 22, 1944, Sec. 1 (a) and (c).

(26) *Id.* Sec. 1 (a).

(27) Act of March 7, 1887, Cal. Stat. 1887, p. 29; 5 Deering's Code, pp. 285-294.

With the passage of time it has become apparent that future multiple-purpose projects, in a very high percentage of cases, must have the financial assistance of the federal government.

During all this period it has become necessary for the Man on the Land to rely upon his duly elected representatives and to put his faith in trained engineers to investigate, plan, and construct the vast projects of the present day. This does not mean that the Man on the Land is powerless. It simply means that the problem is one which cannot be handled through individual effort. Within the legal framework which has been built up over the years to take care of the increasingly complex problem the Man on the Land has not been forgotten. He still votes for his local officials, his state officials, the members of his state legislature, and the members of Congress. He does not have to obligate himself to use water provided by a multiple-purpose project unless he wants to. Freedom of contract remains. If he does not want to take advantage of the power which is generated by falling water, he does not have to buy it. If he has a water right which has vested in accordance with the state law, that right is protected by both state and federal constitutions.⁽²⁸⁾ Indeed, it appears to be a fair comment that because of the initiative and independence of the western farmer he is far less subject to regimentation by bureaucracy than are his urban brothers and sisters.

For the reasons stated, it is suggested that the premises upon which the Report is based cannot be accepted. This indicates that there is no real necessity to study the means by which the Committee seeks to implement its idea. In order to analyze the Report some consideration must be given to what the Committee calls its "diagram how river basin development based upon the Man on the Land and under the authority of the people can be brought about."

The Plan

The plan of the Report for accomplishing "river basin development based upon the Man and the Land" is presented under five headings, viz.:

1. The Intrastate District;
2. The Intrastate River Basin;
3. The Interstate River Basin;
4. Basin Account, and
5. Interstate Operation.

(28) See Hutchins, *Selected Problems in the Law of Water Rights in the West*, Misc. Pub. No. 418, US Dept. of Agri. (1942) pp. 28, 328.

These will be discussed in order.

The Intrastate District.

The Report recommends that district organization be retained under state law. The type of district is nowhere described in the Report. There are many kinds of districts having to do with irrigation matters.⁽²⁹⁾ They vary from the rather simple districts based on the so-called Wright Law to the complex organizations authorized by the Metropolitan Water District law of California and the Water Conservancy District Act of Colorado.⁽³⁰⁾ The idea of irrigation districts has been tested by time. States which do not have statutes relative to district organization should follow the examples set by California, Colorado, New Mexico, and Utah. It would have been helpful if the Committee had made some recommendation as to the type and powers of the district which it had in mind.

The Report says that there should be "full recognition that water rights * * * * are appurtenant to the land." This suggestion is contrary to the laws of those states which permit water rights to be severed and disposed of separately from the land.⁽³¹⁾

The Report recommends that "upon final performance of contract obligations with the government, title and rights to incidental power shall pass to the district." This idea, in varying forms, ap-

(29) In Colorado there are four such district laws, viz.: the Irrigation District Law of 1905, 1935 CSA Chap. 90, Secs. 377-431; the Irrigation District Law of 1921, id. Secs. 432-471; the Public Irrigation District Law of 1935, id. Secs. 472-484; the Water Conservancy District Act of 1937, S. L. 1937 Chap. 266. In Utah see the Metropolitan Dist. Law, Chap. 10, Title 100, Utah Code Ann. 1943 and Utah Water Con. Act, Chap. 11, Title 100, Utah Code Ann. 1943.

(30) In the Report of the President's Water Resources Policy Commission entitled "A Water Policy for the American People" (1950) p. 286 it is said: "To overcome the limitations of organizational and assessing power of such organizations, statutes in all of the 17 Western States provide for irrigation districts, the predominant vehicle for group irrigation development. California's early Wright Act was frequently the model for such statutes. Ascendancy of multiple-purpose projects was accompanied by statutes authorizing districts with still broader powers and wider benefit and cost participation. Examples include the Colorado Water Conservancy District Act, the New Mexico Conservancy District-Reclamation Contract Act, and the Metropolitan Water District Acts of California and Utah."

(31) Hutchins, op. cit. pp. 385-6; Kinney, Irrigation and Water Rights, 2nd Ed. Vol. 2, p. 1818, Wiel, Water Rights in the Western States, 3rd Ed., Vol. 1, p. 587.

pears throughout the Report. As stated here, the intent apparently is that on a project which includes generation of hydroelectric power and which is financed by the United States, the proprietary rights to the power generation and transmission facilities shall pass to the District upon the completion of all payments to the United States. Strangely, nothing is said in this instance about title to irrigation works. There is no recognition of any difference between power generated by a project and used in the operation of the project and power so generated and sold to the public.

It is submitted that so far as power facilities used entirely for the generation of power required for project operations are concerned there is some reason and logic for the transfer of such facilities to a district in the same manner as purely irrigation facilities.⁽³²⁾ But there is a different situation where the power is sold and the returns go into the federal treasury.⁽³³⁾ It is very doubtful that Congress would look with favor upon the idea of making a gift to such a district of power facilities. Unless the power use is strictly confined to the District, persons outside of the District have contributed to payment of project costs through the payment of power revenues and have an interest in the power system.

Nothing is said about the regulation of power rates in this section of the Report. Likewise there is nothing said about the preferential rights of public bodies to power.⁽³⁴⁾ The failure of the Report to cover these points is a serious fault.

In its "rapid review" the Committee proposes:

"2. That under private ownership the water shall be appurtenant to the land together with incidental hydroelectric energy."

(32) See Resolution No. 15, adopted at the November, 1950, meeting of the Association.

(33) See the Hayden-O'Mahoney amendment, Act of Apr. 9, 1938.

(34) The following proviso in Sec. 9 (c) of the Act of Aug. 4, 1939, furnishes the basis for much of the REA power in the West: "Provided further, That in said sales or leases (of power) preference shall be given to municipalities and other public corporations or agencies; and also to cooperatives and other nonprofit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 and any amendments thereof."

This is the most amazing suggestion in the entire Report. The concept of tying hydroelectric power to the land is indeed unique. There is no known state or federal statute under which this could be accomplished. It is difficult to understand what the Committee had in mind. To what land is the power appurtenant? How much power is appurtenant to any particular area of land? When water is truly appurtenant and not severable from the lands it can be used only on that land. The wisdom of this restriction has often been questioned because the nature of the land might change and for one reason or another it might become unfit for agricultural uses.⁽³⁵⁾ Power is an adjunct of industry as well as agriculture. Industry will not be so developed that each forty acre tract can use the same amount of power.

If the quoted provision means what it does not say and is intended to recommend that the power be used within the district in which the project is located, the proposition is still untenable because the power market may be located at a great distance from the project. Scientific advances have made possible the transmission of power over great distances. Surely it was not the idea of the Committee that multiple-purpose projects should be financially handicapped by requiring the use of the power within the immediate neighborhood of the generating station.

It is appalling that in a serious report such as that under consideration any committee would recommend that hydroelectric power be made appurtenant to the land. The mere suggestion of such a fantastic device casts a dark cloud of doubt over the entire Report.

The Intrastate River Basin.

The Report says:

“When a group of reclamation districts is developed on a river whose flow is wholly confined within the boundaries of a state, let an association of these districts be formed to operate under the laws of the state * * * *.”

Herein the term “reclamation district” is used. In the immediately preceding paragraph of the Report reference is made to “district.” Later in the report there appears the phrase “local dis-

(35) Kinney on Irrigation and Water Rights, 2nd Ed., Vol. 2, Sec. 1016, pp. 1817-1820.

trict." It is presumed that these terms all refer to the same agency. The lack of consistency in the use of terms is characteristic of the entire Report.

The form which the "association" of districts will take is not discussed. Will it be a sort of "holding company"? Will membership be voluntary or compulsory? Through what means will authority and power be exercised and obligations maintained? These vital matters are left entirely to conjecture. If there is any existing state law providing for such an association of districts, no reference is made to it in the Report.

The Report states that this organization of districts shall "be formed to operate under the laws of the state and in contractual relations with the federal government * * * *." The meaning of this is not clear. Is it meant that the formation of the association shall be accomplished through contractual relations with the federal government? If this is the case, where is the constitutional and statutory source of power for the association? Does it mean that the association shall contract with the federal government in regard to project financing and construction? If this is meant, then the association must be a legal entity with requisite power and authority. What is the use of the "reclamation district," if the association makes the contracts? Why not have one big district? If the association makes the contract, will the small "reclamation district" have the veto power over contracts and contract terms? If such veto power exists, what function does the association of districts perform? None of these questions are answered by the Report.

The Report recommends that in these intrastate river basins "the entire flow shall be developed, controlled and apportioned equitably to all land to which water rights can be extended and water supplied." An equitable apportionment of water among water users is vastly different from the priority rule of first in time first in right.⁽³⁶⁾ The recommendation is contrary to law in all states which adhere to the pure appropriation doctrine and is of doubtful legality under the riparian theory of water law.

With reference to power, the Report says:

"The incidental power shall also be jointly administered under state regulation, either at the beginning or when contractual obligations with the government have been satisfied."

(36) Hutchins, op. cit. pp. 30-31.

For some inexplicable reason this differs from the recommendation made for "The Intrastate District" which provides that rights to incidental power shall pass to the district "upon final performance of contract obligations with the government." The reason for the different method of treatment is obscure.

The phrase "jointly administered under state regulation" is completely unclear. Does it mean that the association shall jointly administer the power with the federal government? If such is the case, it is inconceivable that the federal government will submit to "state regulation."⁽³⁷⁾ Or is it meant that the "reclamation districts" jointly administer? If this is the case, what philosophy of utility regulation justifies or requires joint action with a district in which the project is not located and which bears no repayment obligation? Is it the theory of the authors of the Report that there be created a number of independent power districts which will compete among themselves and with private utilities?

Attention is directed to the fact that the provision of existing law giving preference to public bodies in the sale of power is omitted.⁽³⁸⁾

The section of the Report on "The Intrastate River Basin" closes with this:

"As in the case of the local district, the association should operate and maintain the works, either directly or through its constituent agencies, and title to the water and power works should after repayment vest in either the association or its constituents."

The requirement that the association or its constituents operate and maintain the works will probably prevent the grant of any nonreimbursable funds by the United States for flood control, navigation, or fish and wild life.⁽³⁹⁾ This follows from the fact that operation of facilities for these functions by a local agency

(37) The United States may perform its functions without conforming to the police regulations of a state (*Arizona v. California*, 283 US 423, 451).

(38) See Note 34 *supra*.

(39) As to nonreimbursability of costs allocated to flood control and navigation see Secs. 9 (a) and (b) of Act of Aug. 4, 1939. As to fish and wild life see Act of Aug. 14, 1946, Pub. Law 732, 79th Congress, 2nd Session.

beyond the control of the national government gives no assurance that the facilities will be operated and maintained for the purposes intended. The cost of nonreimbursable items is paid for by all the taxpayers of the United States, not merely those within the district served by the project. It is entirely irrational to expect that Congress will appropriate nonreimbursable funds for flood control and navigation and then turn over the works constructed with those funds to local agencies not responsible to the United States.

So far as the "power works" are concerned the comment previously made in discussion of "The Intrastate District" applies. The taxpayers of all the United States, not merely of the district, pay for the power works. One of the justifications urged upon Congress to secure authorization of multipurpose projects is that the United States is making an investment in power facilities which will produce revenue for the life of the project. Why should the United States make a gift of such a revenue potential to a local district? And, as previously pointed out, unless all the power is marketed within the district, other persons than those within the district have an interest.

The Interstate River Basin.

The Report recommends that the states of a river basin "either directly or through associations of intrastate districts" enter into interstate compacts. It is pertinent to comment that the compacting power is in the states.⁽⁴⁰⁾ It does not rest in political subdivisions of the states.^(40a)

It is said that "the government should be a party to the compacts." By "Government" is probably meant the United States. While it has been held that the United States may be a party to a compact with a state,⁽⁴¹⁾ none of the recognized water compacts

(40) See Art. I, Sec. 10, US Const., and *Hinderlider v. La Plata etc.*, 304 US 92. A comprehensive discussion of interstate compacts is contained in the Association's report on the Preservation of the Integrity of State Water Laws, op. cit. pp. 123-130.

(40a) Compacts by political subdivisions of one state with political subdivisions of other states would require permissive legislation in each state, and such legislation would be of doubtful validity because of the question of the right of a state legislature to delegate such legislative power. See 11 Am. Jur. 929-937 and *Smithberger v. Banning*, 100 ALR 686, 693 (Neb. 1935).

(41) *Stearns v. Minnesota*, 179 US 223.

made by western states join the United States as a party.⁽⁴²⁾ If the condition is to be met, then all of these compacts must be discarded and new compacts made. It is inconceivable that the states which have compacted will throw their agreements out of the window and start anew.

The Report continues with this:

"Under the compacts the waters of an interstate stream should be apportioned and further authority should be vested in an interstate organization to enter into undertakings with the federal government for the co-operative development of an interstate river basin."

There is no indication as to what is meant by the use of the word "further" in the term "further authority." Does it imply that the "interstate organization" should apportion the water? In the existing water compacts the apportionment is made by the compact itself.

The framework of the "interstate organization" is not given any consideration. Later in the Report reference is loosely made to "interstate organization," "Interstate Compact Commission" and "Interagency Committee." The terms are not defined and their use appears to be inconsistent. It is not clear as to whether or not the federal government will be a part of and participate in the "interstate organization." If the United States is to be a party to all such compacts, then it would seem that the United States should be represented on any administrative agency which is created. If this is the idea, then the term "interstate organization" is misleading.

The next sentence of the Report reads thus:

"Administration of incidental power developments should be provided for in the same interstate compacts."

(42) California claims that it has a compact with the United States by reason of reciprocal legislation (see Sec. 4 (a) Act of Dec. 21, 1928, 45 Stat. 1057 and California Act of Mar. 4, 1929, Chap. 16, p. 38, State of Calif. 1929). This claim is denied by other Colorado River Basin states. In its ratification of the Republican River Compact, Congress at the request of the compacting states inserted in the ratification act certain provisions definitive of the rights of the United States (Act of May 26, 1943, 57 Stat. 86). See also Belle Fourche River Compact, Act of Feb. 26, 1944.

Does this mean that the proposed compacts, or a body created by them, should allocate power among the signatory states? If it does, a most formidable obstacle is placed in the way of compact consummation. Negotiators will recognize their inability to prophesy as to the location of future power markets and accordingly each state will demand for itself the power produced within its borders. The question as to allocation of power was raised during the negotiations of the Upper Colorado River Basin Compact and rejected as impossible.⁽⁴³⁾

Does the above quoted sentence mean that the proposed compacts should set up some sort of interstate public utilities commission to regulate rates and service? If this is the intent, constitutional questions of serious import are raised. Can the states or the federal government delegate such power?⁽⁴⁴⁾

If the intent of the quoted sentence is to set up such an interstate public utilities commission, then there is a patent inconsistency with that section of the Report which says that the "Federal Power Commission should retain its legally assigned rate-making authority" if an interstate commission determines questions of rates and service. And how can there be joint authority over this important matter?

The Report says:

"Perhaps also such compacts should provide that they shall not be effective until approval has been voted at general elections conducted in the affected areas of each of the several states."

This is indeed a novel idea. Compacts are made by states, not by parts of states. If there is to be a popular vote by part of a state it can only be advisory to the legislative body and chief executive of the state. No state is known to have the machinery which would permit the holding of such elections. For the idea to be carried into effect, it will be necessary to enact permissive legislation in every state which seeks to comply with the Report. Such procedure can only delay and encumber development of the western water resource.

(43) See Record of Upper Colorado River Basin Compact Commission, Vol. 2, meeting 6, p. 32.

(44) See discussion of problem in Yale Law Journal, Jan. 1947, pp. 297-303. See also *State v. Sims*, 58 S. E. 2nd 766 (W. Va.) Certiorari granted Oct. 9, 1950 by U. S. Supreme Court.

Next, the Report recommends an "Interagency Committee" to aid and advise the "Interstate Compact Commission." The relationship of such committee and such commission to the "interstate organization" previously referred to is nowhere defined. It is submitted that if there is an administrative agency created by an interstate compact and if the United States is represented on such agency, there is no reason for the existence of an "Interagency Committee." The federal representative on the administrative agency should have and perform the function of coordinating the federal departments and bureaus in their activities regarding streams affected by the compact and should act as liaison officer between the compact administrative agency and the federal bureaus and departments. All functions assigned to the "Interagency Committee" by the Report can and should be performed by the administrative agency set up by the compacts. There is already too much duplication of function in our governmental organization, both federal and state. The idea of creating one committee or bureau to look after another committee or bureau is not conducive to the "Home Rule" which the Report says its authors favor.

The next proposal is an interesting one to come from a Committee which purports to advocate project control by the Man on the Land. It reads:

"The interstate organization should make all decisions and recommendations to Congress as to what steps should be taken in development of a river basin. Subject to the will of Congress, the interstate organization should direct and initiate the steps of the development."

This means an abdication of state power and responsibility to the nebulous "interstate organization."⁽⁴⁵⁾ State development would be placed under the control of the "interstate organization" whose members are chosen in some manner which is not mentioned in the Report. And the Man on the Land would have to get the support of that organization which ostensibly will include other states. Perhaps the project which the Man on the Land needs and desires, and which his State favors and supports runs contrary to the wishes of some other state or states represented on the "interstate

(45) The States are entitled to administer their own affairs through their legislative, executive and judicial departments in their own manner through their own agencies (U. S. v. B. & O. R. Co., 84 US 322). It would seem that state surrender of control over water resources would constitute a delegation of "sovereignty" rather than of "jurisdiction."

organization." It would seem that if the Report is to be taken literally, it can only mean that one state in a basin, acting through the "interstate organization," can block needed development in another state.

In the last quoted excerpt from the Report, the phrase "subject to the will of Congress" is troublesome. Does it mean that Congress has a supervisory control over the "interstate organization"? Or is it intended as a mere recognition of the paramount authority of the national government over public lands, commerce, war, and treaties? A little clarity on such matters as this would have improved the Report greatly.

The Report says:

"Whenever construction of multiple-use projects including reclamation and power are undertaken, we believe it desirable that the great construction agencies of the government should be retained in full vigor and effectiveness."

How can this statement be reconciled with the remainder of the Report? By the phrase "construction agencies" reference must be made to the Bureau of Reclamation and the Corps of Engineers. Except for the last quoted sentence the Report advocates the assumption of the functions of these agencies by districts, associations of districts, and interstate organizations.

Basin Account.

In its consideration of this subject the Report is again inconsistent. At one place the Report states that Basin Account is a device which "should be given consideration" and in another place the Report states that the Committee favors interstate river basin development "using for bookkeeping, planning and other proper purposes the device of the so-called basin account." The reader is left to conjecture as to the true intent of the Committee.⁽⁴⁶⁾

In the discussion of Basin Account the Report says:

"c. Subsidy should not, unless in exceptional circumstances not now visible, be applied to projects that cannot be economically operated and maintained after construction."

(46) Attention is directed to Resolution 3 adopted at the 1950 meeting of the Association. The President of the Association is directed to appoint a Committee to study the Basin Account proposal and report to the Board of Directors.

From the context it is apparent that the word "subsidy" is intended to apply to that portion of irrigation costs which is beyond the abilities of the water users to repay. While the Report does not so state, there are projects under construction and investigation in which the irrigation costs cannot be repaid by the irrigators but must be repaid from power revenues.⁽⁴⁷⁾ There may be some doubt as to whether the word "subsidy" is correctly applied to such a situation. When reference is made to subsidy a person ordinarily thinks of construction costs paid by the national government and not reimbursable to that government. In the situation just mentioned the construction costs are repayable to the United States but are repayable out of power rather than irrigation. The idea of securing support for irrigation from power revenues has been recognized by the Association as proper and desirable.⁽⁴⁸⁾

The phrase "that cannot be economically operated and maintained" shows either confused thinking or confused application of terms. The test is not economic operation and maintenance but the ability of the water users to repay the costs of operation and maintenance. Surely such ability should be the very minimum requirement for participation by a project in any Basin Account which may be established.

The Report says that the administration of a Basin Account should not be given to "any one agency (specifically the Interior Department)." The Report does not disclose what governmental philosophy will permit such an account to be administered by more than one agency. There is still wisdom in the Biblical warning that a man may not serve two masters. Likewise a Basin Account may not be administered by two overlords. One is enough.

The report recommends that the Federal Power Commission retain its "legally assigned rate-making authority in conference with the Interagency Committee and the Interstate Compact Commission." Taken literally this would mean that the Federal Power Commission will have rate-making authority over projects con-

(47) See Act of Aug. 4, 1939, Secs. 9 (a) and (c) and opinion of Solicitor of Interior Department dated Sept. 29, 1944 (M. 33473).

(48) See Resolution No. 18 adopted at the November, 1950, meeting of the Association wherein the Association pledges its support of legislation "to assure continued financial assistance from power revenues where applicable in the return of irrigation costs that are beyond the reasonable ability of the irrigation water users to return within a reasonable period of years."

structed by the Corps of Engineers because that is now legally assigned to it.⁽⁴⁹⁾ It will not have such authority over Bureau of Reclamation projects because there is no existing law delegating to it authority over such projects. If it is the intent of the Committee to impose the rate-making authority in the Federal Power Commission, new and additional legislation is required.

It is not clear why the Report requires the rate-making authority be exercised in conference with "Interagency Committee" and the "Interstate Compact Commission" rather than with the "interstate organization."

Interstate Operation.

The Report says:

"The same interstate organization (federal-state-local) setup to plan, finance and develop multiple-purpose projects should be employed to administer these projects after completion and hold title to them and their benefits once debt is liquidated."

The above quotation indicates that the Committee intends federal participation in the "interstate organization." This matter has previously been discussed. The last quoted excerpt from the Report states that an "interstate organization" shall administer the projects "after completion." This would amount to a further abdication of state sovereignty. Under existing law the acquisition, disposition, and administration of water rights are governed by local state law.⁽⁵⁰⁾ The literal wording of this paragraph of the Report takes such control away from the states and places it in the "interstate organization." The query arises as to whether there is any real difference between this procedure and the Valley Authority procedure.

The Report states:

"In the outline here offered it is not proposed to interfere with the federal function of flood control, navigation, conservation, the construction of locks and harbor facilities and other responsibilities that traditionally fall within the scope of federal activities."

(49) See Act of Dec. 22, 1944, Sec. 5.

(50) Hutchins, op. cit. p. 34 and cases there cited.

The above quoted paragraph piles confusion upon confusion. The proposal for districts, associations of districts, and interstate organizations which shall hold title to and administer multiple-purpose projects is inherently in conflict with the statement that there will be no interference with the traditional federal functions. Certainly this is true unless the Committee places some meaning on the word "interference" not found in the dictionaries.

At several places in the Report reference is made to the debtor-creditor relationship between the federal government and the various organizations which supposedly will represent the Man on the Land and the statement is repeated that when the debt is liquidated the proprietary ownership "shall not be in the federal government but in those who have paid the bills." The insistence upon the debtor-creditor relationship is not consistent with the idea of federal participation which is emphasized through the Report. Under a debtor-creditor relationship the creditor has no control over what the debtor does with his property so long as there is no waste or impairment of security. In the program outlined by the Report the creditor has far greater participation and responsibility.⁽⁵¹⁾ Thus, it is a misuse of terms to refer to the relationship as that of debtor-creditor. Heretofore, reference has been made to the fallacy in saying that the multiple-purpose projects should be turned over to the various types of organizations proposed to be set up to represent the water users. The Report infers that the water users pay the bills on such projects and, hence, should have proprietary title. Of course, this is not correct. Nonreimbursable items are paid generally by the taxpayers of the United States. Power revenues are obtained from customers who may or may not be water users.

The Report says that basin-wide development "calls for an administrative unit drawn from the various levels of government,

(51) The problem is well summarized by Maass in the article "Administering the CVP," *California Law Review*, vol. 38, No. 4, pp. 666, 684. With reference to the Central Valley of California Project he says: "It may be claimed that the United States role would be in many respects that of a banker—to the extent that the federal investment is repaid with interest. But the fact remains that the CVP actually involves a very substantial subsidy from the Federal Government, including nonreimbursable costs allocated to flood control and navigation and interest on the irrigation investment. Further, making the investment, whether or not reimbursable, has a pronounced impact on the fiscal position of the Federal Government, and the risks involved can hardly be regarded as no more than bankers' risks."

local, state and federal—a new type of compact.” It is noteworthy that the Report does not explore the legal difficulties attendant upon the creation of such an administrative unit. Simply stated, the constitutional questions involved relate to the rights of the states and the United States to delegate to such “an administrative unit” legislative, executive, and judicial power. The creation of such administrative units will require, in addition to compact, statutory, and perhaps constitutional, changes. This poses the question of whether or not the development of our western water resource shall remain static while we recast the governmental framework of our country.

To summarize, we can do no better than quote a statement of California’s Governor Warren, who, in discussing the Central Valley of California project, candidly recognized the facts when he said:

“There can not be a simple ‘yes’ or ‘no’ answer to the question of State operation. If we ask the Federal Government to come in here and build Shasta and Friant and other works with its own money, we have to realize the Federal Government has something to say about the project. We can’t eat our pie and have it too.”⁽⁵²⁾

The Report concludes with six specific proposals to implement the recommended program. These include the following:

“5. That the continuing committee be accorded power of action under the direction of the President and the Board of Directors of the National Reclamation Association.

“6. That the Board of Directors be authorized to budget and to meet the necessary expenses of the continuing committee in the performance of its assigned duties.”

These generalities, if adopted by the Association, might possibly result in the creation of an all powerful committee to which might be assigned all the Association funds. There is an extreme hazard in such a proposal. Every river basin in the West presents a different problem. Each state has a different problem. There

(52) As quoted in De Roos, “The Thirsty Land” (1948) p. 172.

would be no home rule, there would be no protection to the Man on the Land, if such a committee were created to formulate a comprehensive plan for seventeen western states.

It must be frankly recognized that water development problems vary from river basin to river basin, from one area within a river basin to another area within that basin, and from one period of time to another period of time. One formula will not solve all problems. The states and the Federal Government each have important responsibilities which they may not avoid. Understanding cooperation is required. It is gratifying that during the last thirty years many of the western states have settled their differences over the use of waters flowing in interstate streams by the compact method.⁽⁵³⁾ The relations between the states and the Federal Government have been improved by the provisions of the 1944 Flood Control Act⁽⁵⁴⁾ which requires the submission of water project reports to the affected states in advance of the transmittal of those reports to the Congress. The creation of its seven regional offices by the Bureau of Reclamation has brought its operations closer to the people.

Granting that much room for improvement remains, the advances which have been made over the years constitute real progress. The existing system has been developed by the application of the democratic principles which constitute the basis for our form of government. The constitutions, statutes, and procedures which we now have should not be casually discarded for some theoretical cure-all, whether that cure-all be the valley authority plan or the super-district plan advocated by the authors of the Report now under consideration.

Upper Colorado River Basin

The plan contained in the Report is unnecessary, unworkable and undesirable in the Upper Colorado River Basin.

(53) La Plata River Compact (Colo. and N. M., Act of Jan. 29, 1925, 43 Stat. 796); South Platte River Compact (Colo. and Neb., Act of March 8, 1926, 44 Stat. 195); Colo. River Compact (Ariz., Calif., Colo., Nev., N. M., Utah, and Wyo., Act of Dec. 21, 1928, 45 Stat. 1057, 43 U.S.C.A. 617-617t); Rio Grande Compact (Colo., N. M., and Tex., Act of May 31, 1939, 53 Stat. 785); Republican River Compact (Colo., Kans. and Neb., Act of May 26, 1943, 57 Stat. 86); Belle Fourche River Compact (So. Dak. and Wyo., Act of Feb. 26, 1944, 58 Stat. 94); Costilla Creek Compact (Colo. and N. M., Act of June 11, 1946, 60 Stat. 246); Upper Colo. River Basin Compact (Ariz., Colo., N. M., Utah, and Wyo., Act of April 6, 1949, 63 Stat. 31); Arkansas River Compact (Colo. and Kans., Act of May 31, 1949, 63 Stat. 145); Pecos River Compact (N. M. and Texas, Act of June 9, 1949, 63 Stat. 159); Snake River Compact (Idaho and Wyo., Act of April 21, 1950, 64 Stat. 29).

(54) Act of Dec. 22, 1944, Sec. 1 (a) and (c).

The Upper Colorado River Basin Compact has created the Upper Colorado River Commission, an administrative agency with defined powers and obligations which do not conflict in any way with the powers, authorities, and obligations of either the federal or the state governments. There is no need for a "new" compact containing provisions for the various "techniques" favored by the Committee. In the states of Colorado, New Mexico, and Utah there are statutory provisions for districts which have ample powers and which give due recognition to the Man on the Land.

The Upper Colorado River Basin States have considered the question of turning over to some "interstate organization" the control of their waters. And they have rejected the idea without a dissenting vote.

The negotiators of the Upper Colorado River Basin Compact have given consideration to the allocation of power by compact and they have rejected that idea.

The Upper Colorado River Basin States believe that no one state in a basin should have the right to veto development in another state. They stand firm and united in their belief that each State may do with its water resource what it sees fit to do. The Upper Colorado River Basin States will not agree to abdicate their State sovereignty so that an "interstate organization" may have full power over the initiation, investigation, planning, construction or administration of water projects.

In the Upper Colorado River Basin the appropriation doctrine of water law applies. This is contrary to the theory of "equitable apportionment" of water among water users and to the principle of correlative rights.

The dream of making power appurtenant to the land is so fantastic that it is unworthy of serious thought.

The Upper Colorado River Basin States believe in Home Rule within limitations inherent in our form of government which is based upon the exercise by the federal government of the powers delegated to it. The water users of the Upper Colorado River Basin intend to and will take the lead in securing the investigation and authorization of desirable water use projects. They accept their responsibility in that regard. They intend to work in cooperation with one another and with the federal government. No new legislation is needed to bring about that cooperation.

No valley authority plan and no super-district plan are needed in the Upper Basin of the Colorado River. The use of the water has been apportioned. The obligations of the states have been defined. Mutual assistance is encouraged by the provisions for the construction and operation of facilities in one state for the benefit of another state or the entire group of states. An administrative agency has been created and has undertaken its duties with a deep sense of responsibility to the signatory States. The Upper Colorado River Basin Compact is designed and intended to provide a means for securing the development of the basin. It is dynamic, not static, in purpose. This clearly appears from its Article I which reads in part:

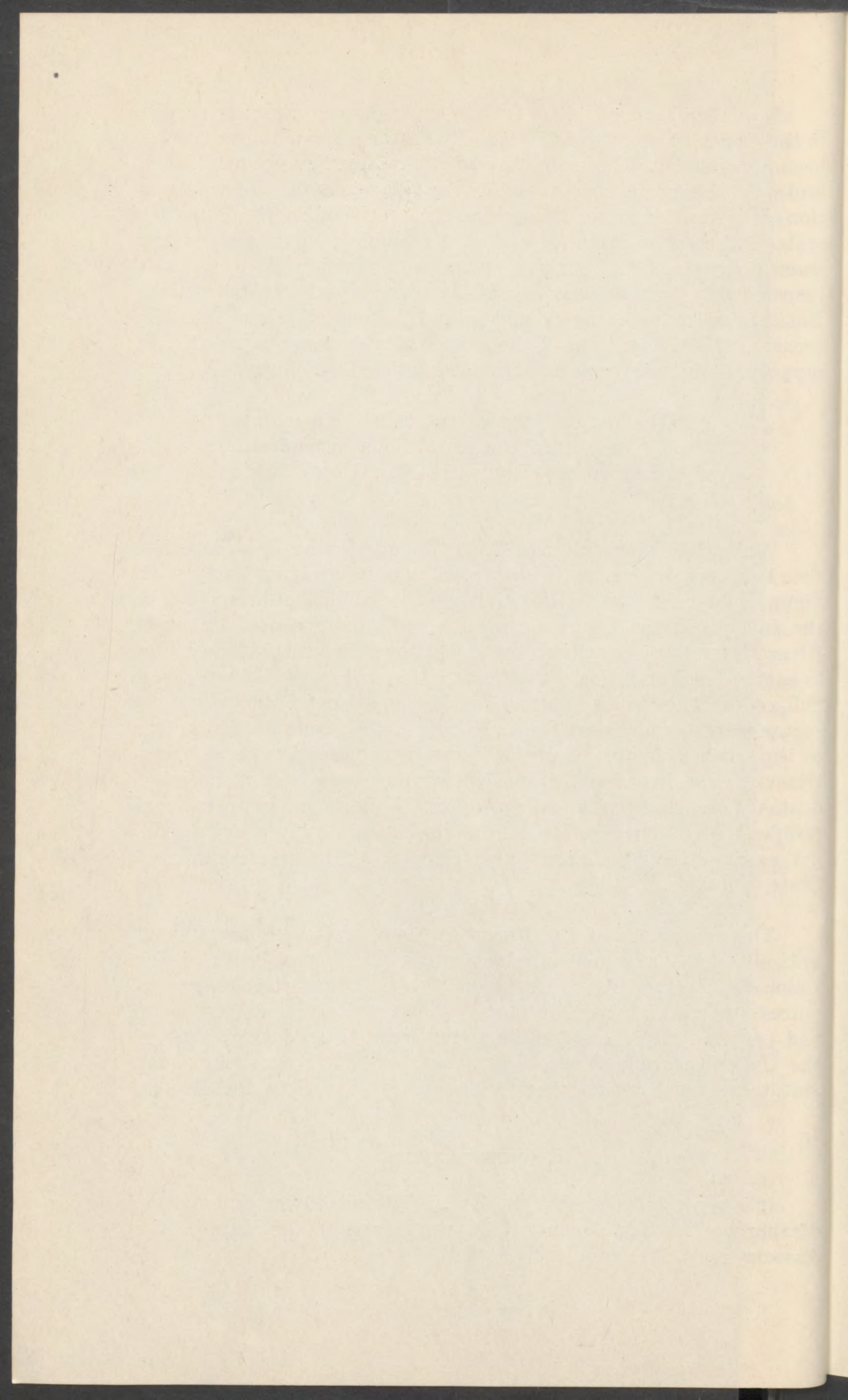
“The major purposes of this Compact are
* * * * to secure the expeditious agricultural
and industrial development of the Upper Basin
* * * *”

While the Upper Colorado River Commission has been in existence less than two years, it has undertaken its assigned tasks with vigor and enthusiasm. Realizing that a condition precedent to the full use in the Upper Basin of its allotted share of Colorado River water is the construction of hold-over regulatory reservoirs to equate Lee Ferry flows, the Commission and its staff have given full cooperation to the Bureau of Reclamation in its efforts to secure the Colorado River Storage Project. The Commission is alive to the basin needs of water for domestic, agricultural, and industrial uses and has assisted and will continue to assist its member States in securing worth while projects. While as yet no operational problems have developed, the Commission can, and no doubt will, act as an effective liaison to coordinate legitimate Federal and State functions.

The acceptance of the Report can only delay, if not prevent entirely, water resource development in the Upper Basin of the Colorado River. This results from the fact that the Report requires sweeping changes in state and federal law, new compacts, and perhaps major constitutional revisions. The development of the Upper Colorado River Basin cannot await the constitutional, statutory, and compact changes necessary to satisfy the Report.

Recommendation

It is recommended that the Upper Colorado River Commission disapprove the Report and advise the Board of Directors of the Association of its action.



APPENDIX B

UPPER COLORADO RIVER COMMISSION City Administration Building Grand Junction, Colorado

July 13, 1950

My dear Mr. Cooke:

The Upper Colorado River Commission is glad to respond to the request of The President's Water Resources Policy Commission for an expression of its views and recommendations with respect to Federal responsibility for and participation in the development, utilization, and conservation of water resources, including related land uses and other public purposes directly concerned with water resources. I have been authorized, by unanimous vote of the Upper Colorado River Commission, to transmit these views to The President's Water Resources Policy Commission.

In the light of the background (hereinafter set forth) of its creation and of its functions, powers and duties, it would seem that the views of the Upper Colorado River Commission should be accorded great weight.

The Upper Colorado River Commission is a creature of Article VIII of the Upper Colorado River Basin Compact which was executed by Commissioners for the States of Arizona, Colorado, New Mexico, Utah and Wyoming on October 11, 1948, and which was thereafter ratified by the Legislature of each of such States and consented to by the Congress.

The Commission consists of five Commissioners, each of whom has a vote, as follows: one Commissioner representing the State of Colorado, one Commissioner representing the State of New Mexico, one Commissioner representing the State of Utah, one Commissioner representing the State of Wyoming; and one Commissioner representing the United States of America. Because of its comparatively slight land area in the Upper Basin, Arizona is not represented on the Commission and does not participate in the expenses of its administration. Arizona has taken, however, and will continue, the Commission is assured, to take a keen interest in the proceedings of the Commission.

The powers of the Upper Colorado River Commission are broad. In addition to the usual and routine powers with which an adminis-

trative body must necessarily be equipped, the Commission is particularly empowered to establish and construct, operate and maintain, water gaging stations; to make estimates to forecast water run-off on the Colorado River and any of its tributaries; to engage in cooperative studies of water supplies of the Colorado River and its tributaries; to collect, analyze, correlate, preserve, and report on data as to the stream flows, storage diversions, and use of the waters of the Colorado River, and any of its tributaries; to make findings as to the quantity of water of the Upper Colorado River System used each year in the Upper Colorado River Basin and in each State thereof; to make findings as to the quantity of water delivered at Lee Ferry during each water year; to make findings as to the necessity for and the extent of the curtailment of use, required, if any, in order that the flow at Lee Ferry shall not be depleted below that required by Article III of the Colorado River Compact; to make findings as to the quantity of reservoir losses and as to the share thereof chargeable under Article V to each of the States; to make findings of fact in the event of the occurrence of extraordinary drought or serious accident to the irrigation system in the Upper Basin, whereby delivery by the Upper Basin of water which it may be required to deliver in order to aid in fulfilling obligations of the United States of America to the United Mexican States arising under the Treaty between the United States of America and the United Mexican States, of February 3, 1944, become difficult, and to report such findings to the Governors of the Upper Basin States, the President of the United States of America, the United States Section of the International Boundary and Water Commission, and such other Federal officials and agencies as it may deem appropriate to the end that the water allotted to Mexico under Division III of the Treaty may be reduced in accordance with the terms of such Treaty.

The powers of the Upper Colorado River Commission partake of a semi-judicial character, in that they pertain to the obligation of the Commission to make findings as to certain matters of vital importance such as quantity of use of water, quantity of deliveries at Lee Ferry, the need, if any, for curtailment of use of water, and the justification, if any, for reduction of deliveries to Mexico.

The powers and functions of the Commission partake also of an engineering character in that they deal with various hydrological investigations required in order to estimate and to forecast run-off and to determine consumptive uses of water and man-made depletion of stream flows. The construction of numerous large storage reservoirs will be essential if the Upper Colorado River

Basin is to attain the development which is clearly indicated by present trends in the growth of its population, agriculture and industry. Many engineering and economic problems will inevitably arise in the design and operation of such reservoirs. This is clear in the light of the multiple uses which should be made of the storage capacity provided by these reservoirs, and when there is envisaged the need to harmonize interests of the several States and of the Federal agencies which will be affected by these uses, to the end of bringing about the most profitable and economic conservation and utilization of the most vital of our Western natural resources. The Upper Colorado River Commission expects to have a major share in the planning, coordination and harmonization involved. It proposes that development of the water resources of the Upper Basin shall proceed on a comprehensive basis that takes into account the legitimate concerns of all—domestic, agricultural and industrial water uses, forests and reforestation programs, national parks, monuments, the protection of fish and wildlife, and recreation.

Finally, in Article I(a) of the Upper Colorado River Basin Compact, it is laid down, in part, that one of the major purposes of the Compact is to "secure the expeditious agricultural and industrial development of the Upper Basin . . ." The Commission has adopted a program designed to achieve that purpose. In working toward that objective, the Upper Colorado River Commission fulfills the desire of the people of the Upper Colorado River Basin for an agency that will interpret the needs of the Upper Basin for prompt and sound development.

While it is believed that the views and recommendations hereinafter presented may well be found to be useful generally in the consideration of problems affecting the development, utilization, and conservation of water resources in the Nation as a whole, and especially in the 17 Western States, they are intended to apply particularly to such development, utilization, and conservation in the Upper Basin portions of those States which are parties to the Upper Colorado River Basin Compact. The Upper Colorado River Commission recognizes that geographic, economic, and other differences between areas may well call, as they have in the past, for differences in approach to the solution of problems affecting the development, utilization and conservation of their water resources. Each area should, in the judgement of the Upper Colorado River Commission, have the fullest opportunity, consistent with its relationship to other areas, and, of course, with the Federal interest, to work out its particular destiny in these respects.

The Federal Government has, in the light of the Commerce, General Welfare, and Treaty clauses of the Constitution, major responsibilities in connection with the development, utilization, and conservation of water resources. The States likewise have important responsibilities in the same fields. Experience in the West has proven that the exercise by each jurisdiction of these responsibilities can be accomplished without serious conflict. In the judgement of the Upper Colorado River Commission, therefore, the Federal Government should, in view of its responsibilities to the Nation as a whole, prosecute vigorously a Nation-wide program looking to the continued development, utilization, and conservation of water resources. Such a program should be well balanced and should consist of the authorization and construction of works for the improvement of navigation, for the control of floods, for river regulation, and for the development, storage, conservation and use of waters for all beneficial purposes, including particularly the fulfillment of domestic, agricultural and industrial needs and the development of hydroelectric power, the improvement and protection of national parks, monuments and recreational areas, the protection and improvement of conditions favorable to fish and wildlife, the fulfillment of obligations of the United States to Indian Tribes.

The character of Federal Government participation in major water resources programs should follow the general pattern developed to date. That is to say, the Federal Government should investigate and report from time to time on proposed projects, following the policies and procedures laid down in Section I of the Act of December 22, 1944, commonly known as the "Flood Control Act of 1944." Authorized projects should be constructed by or under the direction of the Federal Government. Projects should be operated by or under the direction of the Federal Government to the extent necessary to assure fulfillment of the broad national purposes which they are designed to serve. The operation and maintenance of works that have primarily local significance should be confined, to the fullest practicable extent, to local organizations, under contracts that will assure the fulfillment of legitimate Federal objectives to be served thereby.

The need and justification for the maintenance of an ever expanding national economy are such as to indicate that curtailment to any considerable extent of a national program for the worthy purposes heretofore enumerated would constitute not merely a tragic failure of the Federal Government to carry out a vital function, but economic folly as well. It should be borne in mind that projects for the development, utilization, and conservation of

water resources, in addition to their other virtues, enrich and strengthen the Nation by providing expanded opportunities for agricultural and industrial development. They constitute investments that return many times their cost. Although the Upper Colorado River Commission recognizes the need for development on a comprehensive basis and advocates comprehensive planning, it does not believe that the development of individual projects should await the final completion of basin-wide plans. After all, basin-wide plans are subject to expression in general terms. Their details are perfected over the years.

The question then arises: where shall appraisals as to the relative priority of water resource programs, from the standpoint of economic and social need, be made? These appraisals are made today in the Legislative and Executive branches of the Federal Government. In the judgment of the Upper Colorado River Commission, existing jurisdiction should remain undisturbed, subject only to some improvement in the mechanics utilized by the Executive Branch in connection with the analysis of proposed projects and to the consideration of the extent to which conflicts between existing Federal agencies can be eliminated. The Bureau of the Budget should confine itself to the relation of proposed projects to the National budget. It is, in our judgment, inadequately equipped to make detailed analysis of such projects. This is said without intending criticism and merely for the purpose of recognizing a fact. Furthermore, attempts on its part to perform such a function would result inevitably in duplication that ought to be avoided. Finally, the need for the performance of such a function would be obviated, for the most part, by the application of uniform principles in determining the economic justification of projects. In this connection, your Commission might well give consideration to the May 15 report of the Subcommittee on Benefits and Costs of the Federal Inter-Agency River Basin Committee. Basically, the question ought to be whether the amount paid by the direct beneficiaries plus the amounts made non-reimbursable because of the national interests involved exceeds the estimated cost of the project. The direct beneficiaries are those who derive an immediate benefit through the provision of a supply of water, the creation of a source of electric energy, and the improvement of local business conditions. The amounts which they can repay are usually susceptible of reasonably accurate determination. Difficulties sometimes arise in determining the extent of the national benefit which justifies the Federal Government in making an investment of funds derived from tax sources. Certain purposes for which such an investment of funds should be made have been recognized for many years. They are

accepted by the American people as a whole. They include: navigation improvement, flood control, the protection of fish and wildlife. Investment for these purposes should be continued. Consideration should be given to the extent to which additional purposes, of broad national interest, should be added by laws of general application.

Questions of allocation of costs inevitably arise as an incident of the economic justification of projects. Allocations should, in our judgment, be made in accordance with formulae capable of general application. If an allocation of costs is fairly and openly made, then the relative status of each function to be performed by a project will be clear.

It is economically sound, in certain instances (such will be the case in connection with the Upper Colorado River Storage project, for example), to group together a number of projects in a river basin. For certain areas, the use of water for domestic and agricultural purposes is the principal basis of their economy, and yet the users of water for agricultural purposes are not able to repay the total cost properly allocable to such purposes. It is eminently appropriate in such cases that aid should be derived from power revenues to fill the gap between what agricultural water users can repay and the amount allocated to agricultural purposes.

The Congress itself has dealt ably with the problem of evaluating priority needs for and the feasibility of proposed projects, notwithstanding that, in particular cases, it has been faced with difficulties stemming from conflicts between agencies in the Executive Branch of the Government and apparently overlapping Committee jurisdiction.

Greater by far than the need for modification and adjustment of the Federal Government's water resources policies is the need for a better understanding of existing policies, of their historical background and of their gradual evolution, from the days when public works in the nature of river and harbor improvements were first confided to the United States Army Engineers to the day when such works were broadened in conception to include flood control and when the measure of the desirability of such works came to lie in whether their benefits, to whomsoever they might accrue, exceeded their estimated costs; from the day, when the Federal reclamation program was designed primarily as an aid to settling the West to the day when it became a means as well for a broad scale attack on the multiple problems of navigation improvement, flood control, municipal and industrial water supply, agricultural

production, the fulfillment of treaty obligations, recreation, the protection of fish and wildlife, the generation and distribution of hydroelectric power and other purposes. If the background of the development of Federal policy to date and the extent to which such policy has evolved to meet the needs of society were better understood, there would, in our judgment, be fuller appreciation of the extent to which existing policy results generally in the reasonably efficient accomplishment of worthwhile national objectives and there would be manifested a less ready tendency to substitute for the status quo virtually untried policies and administrative schemes.

Much has been heard in recent years, for instance, about Federal policy with respect to the generation and distribution of hydroelectric power and some criticism has been leveled at the policy which permits application of the interest returned on the Federal Government's power investment in Reclamation projects toward the return of the costs of such projects. Much has been heard also about repayment policy and about the so-called "excess land" policy. (Much that has been heard about all of these things evidences a lack of knowledge regarding their objectives, their historical background, their intrinsic merits and the fact that comparatively minor improvements, where required in certain fields, will adjust them well to present-day needs. The wiping out of these policies and the substitution for them of anything untried or approaching mere executive fiat would be destructive work, fraught with serious dangers to a free people.

The generation of hydroelectric energy as an incident of Federal water resource projects and the disposition thereof, "giving preference to municipal purposes," was first authorized as far back as April 16, 1906, in an act of Congress entitled "An Act providing for the withdrawal from public entry of lands needed for town-site purposes in connection with irrigation projects under the reclamation act of June 17, 1902 and for other purposes" (34 Stat. 116), and, shortly after that, the Comptroller of the Treasury held that receipts from the sale of such power should be classified as repayments. Therein lie the beginnings of a policy which has been elaborated through the years, as required to meet the needs of society, until today, under the Federal Reclamation Laws, power plays an increasingly vital function both in the physical and in the financial aspects of water resource projects. With existing general Federal Reclamation Law on the subject of authorization, construction, operation and maintenance of hydroelectric power plants, including transmission lines, and governing rate-making and the distribution of power (and subject to its modernization and modification in

certain respects such as to provide, among other things, for the establishment of a basin account), the Upper Colorado River Commission is satisfied. If other regions believe that they require different treatment of the subject, then they should, of course, have an opportunity to demonstrate the desirability of legislation that will permit such treatment there. The present state of Federal Reclamation Law on this subject, is, however, in general, well suited to development of the Upper Colorado River Basin.

This is so, because the present state of such law, while recognizing fully the vital role of power in itself, protecting against the monopolization of its benefits, affording preferences to municipalities and other public corporations, to REAs and other non-profit organizations, also recognizes the vital role that power plays in the financing of water resource projects as a whole, making feasible from the financial point of view many desirable and worthwhile projects that must otherwise fail to measure up to standards of feasibility. Long delayed development of the water resources of the Upper Colorado River Basin depends in large measure upon the application to that development of the established policy of the Reclamation Law that power plants shall be constructed as an incident thereof wherever the generation of power proves feasible; that preference in the distribution of such power shall be accorded to municipalities and REAs; and that power revenues, in excess of those required to meet operation, maintenance and amortization costs of the power plants, shall be available to help pay off the other costs of water resource projects. In this connection, the suggestion has been made in certain quarters that REA cooperatives, for instance, ought not to have to pay for power a rate in excess of that required to operate, maintain and return the cost of the power generation and distribution plants themselves. Such a conception fails to take account of the fact that, in the Western States, at least, the farmers in the main owe their very existence to water resource development projects which could not, in turn, exist without power as a paying partner. So far as the Upper Colorado River Basin is concerned in any event, it appears clear that even the large scale irrigation development which is in the offing will not require financial assistance through any special component of power rates, but that interest returned on the power investment will be sufficient therefor. In other words, those irrigation costs of our prospective development that are beyond the reasonable ability of prospective irrigation water users to repay within a reasonable period of years can be financed through revenues derived from the interest component of power rates as provided by existing Reclamation Law, and, so long as the traditional policy of applica-

tion of such interest revenues to return of costs permits, the REA cooperatives and others are assured of reasonable rates for power. In this connection, it should be borne in mind that the interim report on development of the water resources of the Upper Colorado River Basin (a report the salient features of which have been favorably commented upon by the five Upper Basin States) envisages the establishment of a basin account that recognizes the financial interrelationship of projects participating and that provides for financial assistance from power revenues. This basin account recognizes the essential unity of the Upper Colorado River Basin. It serves a two-fold purpose: First, in that it averages the cost of power development throughout the Upper Basin, thus diffusing, by means of uniform rates, the benefit of the Upper Basin's power developments; and, second, in that it provides a means whereby proposed irrigation developments may be judged on their intrinsic merits, that is to say, on the basis of their benefit-cost ratios, without regard to the question whether a particular development has associated with it a power development of magnitude sufficient to repay those irrigation costs that are beyond the ability of the water users to repay. We regard a basin account as necessary for the purpose of achieving a power rate based upon the cost of all the proposed power developments in the Upper Basin and also for the purpose of providing a pool of financial assistance to irrigation developments so that their undertaking will be dependent solely upon their own merits and without regard to the geographic accident of their location in relation to a particular power development. In other words, the essential need in the Upper Colorado River Basin is a plan for the Upper Basin as a whole—a plan where-by projects will be developed, not only in and of themselves, but from the standpoint of their relation to the Upper Basin as a whole.

As has been pointed out, the policy of application of power revenues to project costs was first laid down in 1906. It was reiterated in the Hayden-O'Mahoney amendment of 1938. It has been applied ever since that date. It is an established policy that is fully consistent with sound government and with sound accounting. It is highly beneficial to existing and further water resource development in the Western States.

The historical basis for the traditional policy of application of the revenues derived from the interest component of power rates to the return of the Federal Government's investment is so often used as to give rise to the statement: "Yes—we understand the historical argument. We understand that such has been the practice ever since the year 1906; but what about the merits?" Merit,

as well as tradition, is on the side of adherence to the policy of application toward return of the costs of Federal Reclamation projects of the revenues derived from the interest component of power rates.

The basis for not requiring the return, by those who repay and return the reimbursable costs of Federal reclamation projects, of interest on those costs, lies principally in the fact that encouragement thus given to the undertaking of projects for the development, conservation and utilization of water resources produces benefits for the general welfare of the country as a whole and that the cost of providing such encouragement should, therefore, be borne by the country as a whole. In the final analysis, under the provisions of the Hayden-O'Mahoney amendment, once power revenues have paid into the Reclamation Fund all sums allocated to be returned from the power revenues of a particular project, then all subsequent net power revenues flow into the General Fund of the Treasury. Thus, the Federal Government stands, in time, to collect directly, many times the interest first forgiven. And this is in addition to the gain in Federal revenues derived from increased tax revenues in the area served by the project. The Upper Colorado River Commission confidently predicts that studies will show conclusively that in particular areas this gain in tax revenues alone is much more than sufficient to reimburse the Federal Government with interest for its total outlay in the construction of a project.

The preservation and continued application of that policy is vital to further development of water resource projects in the Upper Colorado River Basin. Finally, since the abandonment of that policy would greatly increase the cost of power, the preservation and application of that policy is of immense importance to REA co-operatives, municipalities, and others, for which power should, of course, be supplied at the most reasonable rates.

Certain costs of Federal reclamation projects are, by existing law, declared to be non-reimbursable. These are those costs allocated to certain broad purposes, generally recognized as bringing about benefits to the Nation as a whole, as distinguished from purely local benefits. Among these purposes are: the improvement of navigation, flood control and the protection of fish and wildlife. In recent months, the question has arisen whether the cost of certain additional purposes should be added to the non-reimbursable class. The Upper Colorado River Commission believes that, insofar as water resource projects serve additional broad national purposes in the interests of the taxpayers as a whole, costs properly allocable to such additional purposes should likewise be non-reimbursable.

It believes, furthermore, that the operation and maintenance costs properly allocable to any and all purposes the costs of which are or hereafter may be held to be non-reimbursable should be non-reimbursable.

The repayment policy of the Federal reclamation laws has been modified from time to time to meet the needs of society. In the beginning (June 17, 1902), ten years constituted the maximum repayment period. That period has since been expanded to forty years, in the case of the traditional repayment contract, and in the case of the newer type of water service contract, to a reasonable period of years. The Upper Colorado River Commission would look with favor upon a reasonable extension of the repayment period under the traditional form of repayment contract. It would look with favor also upon the modernization of Section 9(e) of the Reclamation Project Act of 1939 in such a way as to afford, so far as practicable, to parties contracting under that section the advantages of the traditional repayment contract. All in all, the Bureau of Reclamation has achieved an enviable record in obtaining the repayment and return of project costs. That record can be improved, so far as repayment and returns from irrigation water users are concerned, by the more realistic analysis of repayment ability and by the application of formulae that will permit of adjustments in times of economic change.

The so-called "excess land" policies of the Federal reclamation law, designed as they are to encourage the settlement of the West through the creation of farm homes, to prevent the growth of excessively large estates and thus to prevent the monopolization of irrigation benefits, are sound in conception. Their intrinsic merit is beyond question. The Upper Colorado River Commission is in accord with their basic policy. There will, however, be found cases where rigid insistence upon an irrigable acreage not exceeding 160 or 320 acres, as the case may be, results in an acreage insufficient for the support of a family and thus, to a degree, in thwarting the basic policy of the excess-land provisions. There will be found, also, cases involving the provision of supplemental water supplies to established areas, where rigid insistence upon the rule is contrary to common sense as well as the general welfare. Such cases may lead to outright winking at contravention of existing law or to the strained construction thereof. The Upper Colorado River Commission believes that consideration might well be given to the creation of statutory procedures designed to permit the Secretary of the Interior to authorize holdings in excess of the existing statutory maximum in cases where, after hearings and the consideration of pertinent facts, he determines that, in the light of soil quality,

character of agriculture, historical background, the need of the affected community to retain a given operational unit and other appropriate factors, a larger area should be permitted. If such decisions of the Secretary of the Interior were prevented from becoming effective prior to the expiration of sixty days from the date of report thereon to the President and the Congress, abuses would be obviated.

It has been pointed out that, in the view of the Upper Colorado River Commission, subject to its modernization and modification in certain respects, the existing state of Federal law and policy constitutes a generally satisfactory basis for development in the Upper Colorado River Basin. It is our view that such development should proceed also in accordance with the "law of the river," to-wit: The Colorado River Compact, the Boulder Canyon Project Act, the California Self Limitation Act, the Boulder Canyon Project Adjustment Act, the Mexican Treaty, and the Upper Colorado River Basin Compact. It is our view that such development should be authorized promptly. The development of the Upper Colorado River Basin has too long lagged behind that of other areas of the West. The plans for its development are sound from the engineering and financial point of view. Development, to the fullest extent permissible, within the limits of consumptive use apportioned to the Upper Basin by the Colorado River Compact, will redound also to the benefit of the Lower Basin and to the Nation as a whole.

Finally, we believe that administration of the comprehensive development of the water resources of the Upper Colorado River Basin should, subject to regulations that will fully safeguard the Federal interest, be confided to the fullest practicable extent to the Upper Colorado River Commission. In its very nature and by its very location, the Upper Colorado River Commission would constitute a practicable means for decentralization of administration and for administration through an agency close to the people most affected.

There are enclosed the answers of the Upper Colorado River Commission to a series of questions posed by your Commission. Time limitations are such as to compel us to ask your Commission to refer to the text of this letter in those cases where we have found it impossible to elaborate the answers to particular questions.

Should you desire information or further details in connection with the subject matter, please feel free to call upon me. I shall be glad to respond to the fullest practicable extent to any inquiries which you may desire to make, or to meet with you at your con-

venience, in Washington or elsewhere, to the end of furnishing the fullest possible assistance.

Sincerely yours,

/s/ John Geoffrey Will

John Geoffrey Will
Secretary and General Counsel
Upper Colorado River Commission

Honorable Morris L. Cooke, Chairman
The President's Water Resources Policy Commission
Premier Building, 18th Street NW
Washington, D. C.

Enclosure

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APPENDIX C

ENGINEERING PROGRAM

Explanation

Paragraph (d) (2) of Article VIII, giving the Commission's powers, reads "Locate, establish, construct, abandon, operate and maintain water gaging stations." At the December 12, 1949 meeting of the Commission, the Engineering Committee was asked to study the need for gaging stations to be used for administrative purposes, and to submit a list of stations believed to be necessary. A revised list of stations was sent to the Chairman of the Commission under date of February 7, 1950, by the Chairman of the Engineering Committee. These stations, selected by the Engineering Committee, in cooperation with engineers of the Bureau of Reclamation and of the U. S. Geological Survey, are considered as having been "located" by the Commission when the report of the Engineering Committee containing the list of stations was adopted by the Commission. Most of these stations have already been established and are being operated by the U. S. Geological Survey or the State of Colorado. The control and operation of substantially all of these stations by the U. S. Geological Survey has been recommended by the Engineering Committee, but it is not certain at this time whether or not sufficient funds will be made available to the Geological Survey to handle all of these stations as Upper Colorado River Commission stations for the ensuing fiscal year beginning July 1, 1950. Report will be made to the Commission at their regular September meeting. The list of stations is attached hereto.

It is proposed that a record be kept for each station, including description, location map and photograph. This material is to be collected as opportunity permits, together with preliminary tables of daily discharges, stage-discharge curves, etc. Visits will be made to as many of these stations as possible and it is proposed to cover the entire Upper Colorado River Basin as soon as possible and, in any event, within the course of two or three years.

Paragraph (d) (3), Article VIII, reads "Make estimates to forecast water run-off on the Colorado River and any of its tributaries." The importance of forecasting run-off in the Colorado River Basin must be recognized when annual conferences are held, such as those of the Colorado River Water Forecasting Committee and the Western Snow Conference, to study and discuss problems and results of river discharge forecasts. It is proposed to collect

reference material, climatic and run-off data, and to make independent estimates of run-off for the standard period April 1 through July 31 for the Colorado River at Lee Ferry, and for the more important tributaries. Considerable material for this purpose has already been obtained. This will be carefully studied and procedures will be tested for the making of forecasts. The results of preliminary studies and trials will be reported at the annual meeting in 1951.

Paragraph (d) (4), Article VIII, reads "Engage in cooperative studies of water supplies of the Colorado River and its tributaries." Attendance at conferences and conventions, such as those covered by the two special reports submitted at the June 1950 meeting of the Commission, will be continued and it is recommended that the Commission become a participating member of such groups.

Paragraph (d) (5), Article VIII, reads "Collect, analyze, correlate, preserve and report on data as to the stream flows, storage, diversions and use of the waters of the Colorado River, and any of its tributaries." A reference library of books, periodicals, maps and reports has already been started. Some 195 Water Supply Papers and more than 800 maps have already been received from the Washington Office of the U. S. Geological Survey. A considerable number of Water Supply Papers which are "out of print" are also being supplied through the Denver Office of the Survey as a special service. Many reports have also been received from the U. S. Weather Bureau and the Soil Conservation Service. Biennial Reports of State Engineers have also been requested. I wish to record here that the most cordial reception and utmost cooperation has been accorded all requests for information, assistance, and material, whether they were made by letter or at personal interviews. In addition, many offers and suggestions have been made as to the nature and source of material and records which might prove helpful or interesting. Analysis and correlation of records will be required in the making of forecasts and reports of a routine or special nature.

Paragraph (d) (7), Article VIII, reads "Make findings as to the quantity of water deliveries at Lee Ferry during each water year." This is one of the less difficult and involved items to be reported, since only small adjustments need be made to the records of the discharge of the Colorado and Paria Rivers at Lee Ferry to obtain the quantities delivered at the Compact Point.

The necessity for curtailment of use, referred to in Paragraph (d) (8), will probably not occur for many years to come, if at all.

Certainly, curtailment will not be required until after much more development has taken place, including the construction of several main stem reservoirs. The detailed studies necessary to report on this item will therefore be postponed for the present, keeping in mind the collection of records, such as progressive ten year averages, which will be required for use if and when curtailment does become necessary. It should be remembered also that the developments attendant upon the construction of the Colorado River Storage project should make such a contingency as that of requiring the Commission to call upon the Upper Basin States to reduce the use of water below that of their allotments very remote indeed.

Reservoir losses, which are to be determined under the provisions of Paragraph (d) (9), will be automatically included in the depletion chargeable to each state, by use of the Inflow-Outflow method, under the conditions set up in Article V(a). Detailed determinations of reservoir losses considered under the remaining provisions of Article V will also be postponed for the present, but care will be taken to see that it will be possible to obtain the total amount of such losses whenever a unit of the storage project is completed.

One of the first undertakings of the department will be to replot all inflow-outflow diagrams on larger scale sheets, and bring the data up to date wherever and whenever new records become available. New and revised curves will also be developed as new stations are installed where recommended by the Commission. This is a requirement set up by Article VI of the Compact.

Other demands upon the engineering department for information or findings of a technical nature are to be found in other articles in the Compact in addition to those listed from Article VIII. For example, it may become necessary to determine the reservoir capacity allocated for different purposes in multiple purpose reservoirs, especially when storage space may be assigned to a particular project (or State) and also to set up regulations to maintain deliveries at Lee Ferry.

Article XI (a) (2) provides for an interstate priority schedule on the Little Snake River and it will, no doubt, be the responsibility of the engineering department to obtain this schedule. Somewhat similar provisions and interstate schedules are also found in Article XII which refers to Henry's Fork and tributaries.

Another, and very obvious, requirement of this department (the first one undertaken in fact) is that of making detailed and

critical examinations of any reports on irrigation, storage, power or other projects, papers or proposals which come before the Commission for consideration, and concerning which the Commission may request or require an opinion, and submit a statement or report upon the matter. It may also be necessary to be prepared to attend and assist, in the interest of the Commission, at conferences and hearings, either as technical advisors or witnesses.

It is my purpose, as Chief Engineer to plan and carry out the work of the engineering department and staff along these lines, and so as to provide the material, records and reports outlined above and to undertake such other specific duties and assignments as directed by the Commission or its Secretary.

Respectfully submitted,

/s/ R. D. Goodrich

R. D. Goodrich, Chief Engineer

APPENDIX D

BUDGETS FOR THE FISCAL YEARS ENDING JUNE 30, 1952 and JUNE 30, 1953

UPPER COLORADO RIVER COMMISSION

Denver, Colorado
November 27, 1950

REPORT OF BUDGET COMMITTEE

Your Budget Committee has met on several occasions to consider matters relative to the Upper Colorado River Commission budgets for the fiscal years ending June 30, 1951, 1952 and 1953.

Mr. John Geoffrey Will, your Secretary and General Counsel, met with the Committee, presented his recommendations, and participated in discussions.

Your committee recommends that the Budget for the current fiscal year, that is to say, the fiscal year ending June 30, 1951, remain at \$45,700.00, distributed as follows:

Personal Services	\$31,690.00
Travel	5,150.00
Current Expenses	3,915.00
Capital Outlay	2,695.00
Printing	2,250.00
Total	\$45,700.00

Your Committee further recommends that funds carried over for the fiscal year ending June 30, 1950, be set aside as a reserve for contingencies which may be allocated for expenditure during the fiscal year ending June 30, 1951, should the need therefor arise.

Your Committee further recommends that, hereafter and until further order of the Commission, redistribution of items in an approved budget be deemed authorized upon the recommendation of the Secretary, approved by the Vice-Chairman of the Commission and the Chairman of the Budget Committee.

Your Committee recommends that the Budget for the fiscal year ending June 30, 1952 be fixed at \$68,800.00, distributed as follows:

BUDGET FOR THE FISCAL YEAR 1952

PERSONAL SERVICES

Salaries

Administrative

J. G. Will	\$13,750
R. D. Goodrich	10,000
Engr. Asst.	3,200

Sub-Total \$26,950

Clerical

Mrs. Burns	\$ 3,000
Miss Anderson	1,560
Part-Time Sec'y.	1,340

Sub-Total \$ 5,900

Total P/S \$32,850

CAPITAL OUTLAY

Automobile	\$ 2,000
Adding Machine	250
Drafting Table & Equip.	400
Engineer Equipment	800
File Cabinet	125
Map Files	275

Total C/O \$ 3,850

OFFICE SUPPLIES

Single Item—Total O/S \$ 2,000

INFORMATION

Radio	\$
Exhibits	2,000
Publications	8,000
Travel	1,500

Total Information \$11,500

TRAVEL

Single Item—Total Travel \$ 7,000

CURRENT EXPENSES

Reporting	\$ 3,000
Telephone & Telegraph	600
Printing	2,000
Accounting	500
Insurance & Bonds	500

Total C/E \$ 6,600

CONTINGENT RESERVE

Single Item—Total C/R \$ 5,000

TOTAL BUDGET \$68,800

Your Committee recommends that the Budget for the fiscal year ending June 30, 1953 be fixed at \$83,200, distributed as follows:

BUDGET FOR THE FISCAL YEAR 1953

PERSONAL SERVICES

Salaries

Administrative

J. G. Will	\$13,750	
R. D. Goodrich	10,000	
Engr. 1st Asst.	9,000	
Engr. 2nd Asst.	3,600	
Sub-Total		\$36,350

Clerical

Mrs. Burns	\$ 3,240	
Miss Anderson	1,800	
Stenographer	1,560	
Sub-Total		\$ 6,600

Total P/S

\$42,950

CAPITAL OUTLAY

Auto Replacement	\$ 1,200
Additional Chairs	100
Storage Cabinet	100
2 Typewriters	300
Desks	700
2 Cabinets File	250

Total C/O

\$ 2,650

OFFICE SUPPLIES

Single Item—Total O/S

\$ 2,500

INFORMATION

Radio	\$ 3,000
Exhibits	2,000
Publications	7,000
Travel	1,500

Total Information

\$13,500

TRAVEL

Single Item

\$ 9,000

CURRENT EXPENSES

Reporting	\$ 3,300
Telephone & Telegraph	1,050
Printing	2,000
Accounting	500
Insurance & Bonds	750

Total C/E

\$ 7,600

CONTINGENT RESERVE

Single Item—Total C/R

\$ 5,000

TOTAL BUDGET

\$83,200

For information of the States affected, the following tabulation shows the individual State Assessment for each of the fiscal years 1952-1953 and for the Biennium 1952-53.

STATES' CONTRIBUTION
For
BUDGET ITEMS—RECOMMENDED FOR APPROVAL

States	Fiscal Year 1952	Fiscal Year 1953	Biennium 1952-53
Colorado	\$35,604	\$43,056	\$ 78,660
New Mexico	7,740	9,360	17,100
Utah	15,824	19,136	34,960
Wyoming	9,632	11,648	21,280
TOTALS	\$68,800	\$83,200	\$152,000

For information only, the following tabulation shows a segregation of the budget items recommended for fiscal years 1952-1953 under six principal headings:

Item	Fiscal Year 1952	Fiscal Year 1953
Personal Services	\$32,850	\$42,950
Travel	8,500	10,500
Current Expenses	6,600	8,100
Capital Outlay	3,850	2,650
Printing	12,000	14,000
Contingent Reserve	5,000	5,000
TOTALS	\$68,800	\$83,200

TO SUMMARIZE

Your Committee recommends Commission approval of:

- (1) The redistribution of funds for the present fiscal year.
- (2) The provision that hereafter and until further order of the Commission, redistribution of items in an approved budget be deemed authorized upon recommendation of the Secretary, approved by the Vice-Chairman of the Commission and the Chairman of the Budget Committee.
- (3) The Budgets herein presented.

Respectfully submitted,

/s/ C. O. Roskelley

C. O. Roskelley, Chairman

/s/ Clifford H. Stone

Judge Clifford H. Stone

/s/ John H. Bliss

John H. Bliss

/s/ Norman W. Barlow

Norman W. Barlow

/s/ John R. Riter

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APPENDIX E
BY-LAWS (AMENDED)

ARTICLE I.

THE COMMISSION

1. The Commission shall be composed of one Commissioner representing each of the States of Colorado, New Mexico, Utah and Wyoming, designated or appointed in accordance with the laws of each such State, and, if designated by the President, one Commissioner representing the United States of America.

2. The credentials of each Commissioner shall be filed with the Secretary of the Commission.

3. Each Commissioner shall advise in writing the Secretary of the Commission as to his address to which all official notices and other communications of the Commission shall be sent to him and shall further promptly advise in writing the Secretary of the Commission as to any change in such address.

ARTICLE II

OFFICERS

1. The officers of the Commission shall be:

Chairman,
Vice-Chairman,
Secretary,
Treasurer,
Assistant Treasurer.

2. The Commissioner representing the United States of America shall be the Chairman of the Commission. The Chairman shall preside at meetings of the Commission. His duties shall be such as are usually imposed on such officers and such as may be assigned to him by these by-laws or by the Commission from time to time.

3. The Vice-Chairman shall be one of the Commissioners representing a State. He shall be elected at each annual meeting of the Commission and shall hold office until the next annual meeting

and until his successor is elected. In the case of a vacancy in the office of Vice-Chairman, the Commission shall at its next meeting, whether regular or special, elect a Vice-Chairman to serve for the unexpired term. The Vice-Chairman shall perform all the duties of the Chairman when the Chairman is unable for any reason to act or when for any reason there is a vacancy in the office of Chairman. In addition the Vice-Chairman shall perform such other duties as may be assigned to him by the by-laws or the Commission from time to time.

4. The Secretary shall not be a member of the Commission, or an employee of any state signatory to the Upper Colorado River Basin Compact or of the United States of America while acting as Secretary. The Secretary shall be selected by the Commission. He shall serve for such term and receive such salary and perform such duties as the Commission may direct. In the case of a vacancy in the office of Secretary the Commission shall proceed as expeditiously as possible to select a new Secretary. The Secretary shall furnish a bond for the faithful performance of his duties if the Commission shall so direct. The cost of such bond shall be paid by the Commission. The Commission may from time to time designate, or it may authorize the Secretary to designate, an employee to serve as Acting Secretary during the time the Secretary temporarily may be incapacitated or absent from the principal office of the Commission.

5. Neither the Treasurer nor the Assistant Treasurer need be a member of the Commission. The Treasurer shall be elected at each annual meeting of the Commission and shall hold office until his successor is elected and shall have qualified. The Assistant Treasurer shall be appointed by the Treasurer with the approval of the Commission and shall hold office until his successor is appointed and shall have qualified. The Treasurer and the Assistant Treasurer shall have power to receive, hold and disburse funds of the Commission. The Treasurer and the Assistant Treasurer shall each furnish a bond, or they shall furnish a joint bond covering both, for the faithful performance of his, or their, duties in such amount as the Commission may direct. The cost of such bond, or bonds, shall be paid by the Commission. In the case of a vacancy in the office of Treasurer the Chairman shall appoint a new Treasurer to serve for the unexpired term or until such time as the Commission shall elect a successor at a regular or special meeting and the person so elected shall have qualified. In the case of a vacancy in the office of Assistant Treasurer, the Treasurer shall, with the approval of the Chairman, appoint a new Assistant Treas-

urer, who shall serve until such time as a successor shall have been appointed and such appointment shall have been approved by the Commission.

6. The Commission may employ such engineering, legal, clerical and other personnel as, in its judgment, may be necessary. They shall receive such compensation and perform such duties as may be fixed by the Commission.

ARTICLE III

PRINCIPAL OFFICE

1. The principal office and place of business of the Commission shall be located in the City of Grand Junction, Colorado.

2. The principal office shall be open for business on such hours and days as the Commission may from time to time direct.

3. All books and records of the Commission shall be kept at the principal office of the Commission. Except as otherwise provided in the Compact or herein, all records of the Commission shall be open to inspection by the public during the hours the principal office is open for business. Whenever the Commission believes that the purposes and objects of the Compact will best be served by reserving certain of its records from public inspection, it may so order.

ARTICLE IV

MEETINGS

1. The annual meeting of the Commission shall be held on the third Monday of September of each year.

2. The Commission shall hold a regular meeting on the third Monday of March of each year.

3. Special meetings of the Commission may be called by the Chairman, or in case of vacancy in the office of Secretary or the inability of the Secretary to act, by the Vice-Chairman. Upon written request of two or more Commissioners it shall be the duty of the Chairman to call a special meeting.

4. Notice of all meetings of the Commission shall be sent by the Secretary, or in the case of a vacancy in the office of Secretary or the inability of the Secretary to act, by the Chairman, to all members of the Commission by ordinary mail at least ten days in

advance of each such meeting. The notice here required may be waived by unanimous consent of all members of the Commission.

5. Unless otherwise agreed to in advance by not less than four members of the Commission, all annual and regular meetings of the Commission shall be held at the principal office of the Commission. Special meetings shall be held at the office of the Commission unless the notice of any such special meeting shall designate some other place for the meeting. No meeting of the Commission shall be held other than in an Upper Colorado River Basin state or in Washington, D. C. unless at least four members of the Commission have consented in writing to the place for the meeting in advance of the transmittal of notices of the meeting. The Commission shall hold no meetings outside of the United States of America.

6. The Commission shall employ a qualified Reporter to record and transcribe the proceedings of the meetings of the Commission. The transcript and the approved minutes of the Commission shall be preserved in a suitable manner. Minutes until approved by the Commission shall not be official and shall be furnished only to members of the Commission, its employees and committees.

7. Any four members of the Commission shall constitute a quorum: provided that, when a quorum is present, an absent member may be represented by his proxy and such proxy shall have all of the powers of a member at such meeting.

8. Each member of the Commission shall have one vote.

9. Except as otherwise provided in the Upper Colorado River Basin Compact or herein, the concurrence of four members of the Commission shall be required in any action taken by it.

10. At each meeting of the Commission, the order of business, unless agreed otherwise, shall be as follows:

- Call to order;
- Reading of minutes of last meeting;
- Approval of minutes of last meeting;
- Report of Chairman;
- Report of Secretary;
- Report of Treasurer;
- Report of Committees;
- Unfinished business;
- New business;
- Adjournment.

11. All meetings of the Commission, except executive sessions, shall be open to the public. Executive sessions shall be open only to officers and members of the Commission and two advisers designated by each member; provided, however, that the Commission may call witnesses before it in such sessions.

12. Any meeting of the Commission may be adjourned or continued from time to time and from the place set for the meeting to another place: provided that, without the written consent of four members of the Commission no adjournment or continuance shall be for more than thirty days or to a place other than that set for the meeting so adjourned or continued.

ARTICLE V

COMMITTEES

1. There shall be the following standing committees:

Engineering Committee,
Legal Committee,
Budget Committee.

2. The standing committees shall have the following duties:

- (a) The Engineering Committee shall advise the Commission on all engineering matters that may be referred to it.
- (b) The Legal Committee shall advise the Commission on all legal matters that may be referred to it.
- (c) The Budget Committee shall prepare the annual budget and shall advise the Commission on all fiscal matters that may be referred to it.

3. Members of committees may or may not be members of the Commission. The number of members of each committee shall be determined from time to time by the Commission. Each member of the Commission shall designate the member or members on each committee representing his government. In all committee action the vote shall be taken by governments with each government having one vote.

4. The Chairman and Secretary shall be ex-officio members of all committees.

5. The Chairman of each Committee shall be designated by the Chairman of the Commission from the members of the committee.

6. The Commission may from time to time create special committees, composed of such members and others and assigned such tasks as the Commission may determine.

7. Formal Committee reports shall be made in writing and filed with the Secretary of the Commission.

ARTICLE VI

RULES AND REGULATIONS

1. So far as consistent with the Upper Colorado River Basin Compact, the Commission may adopt Rules and Regulations.

2. All proposals for Rules and Regulations or for changes in Rules and Regulations must be presented to the Commission in writing and shall not be acted on at the meeting when first presented but shall go over for action at a designated subsequent meeting of the Commission.

3. Following presentation to the Commission, public notice of all proposed Rules and Regulations and changes in Rules and Regulations shall be given by two publications, at least one week apart, in some newspaper of general circulation in each of the member states. The Commission member from each state shall designate the newspaper in his state in which such publication shall be made. No Rule or Regulation and no change in any Rule or Regulations shall be effective until a date specifically stated in the published notice, which date shall be at least ten days after the last publication. It shall be the duty of the Secretary to see that the necessary notices are published as herein required.

4. The Secretary shall compile the Rules and Regulations of the Commission and shall prepare copies for distribution to the public under such terms and conditions as the Commission may prescribe.

ARTICLE VII

FISCAL

1. All funds of the Commission shall be received by the Treasurer or Assistant Treasurer and deposited by him in a depository or depositories designated by the Commission.

2. Disbursements of Commission funds shall be made by check by the Treasurer or Assistant Treasurer upon vouchers approved by the Chairman, Vice-Chairman, or the Secretary.

3. On or before December 1 of each year, the Commission shall adopt and transmit to the Governors of the four States and to the President of the United States a budget covering an estimate of its expenses for the following fiscal year and of the amount payable by each state under the provisions of the Upper Colorado River Basin Compact.

4. The payment of the expenses of the Commission and of its employees shall not be subject to the audit and accounting procedures of any of the four states.

5. All receipts and disbursements of the Commission shall be audited yearly by a qualified independent public accountant to be selected by the Commission and the report of the audit shall be included in and become a part of the annual report of the Commission.

6. The Secretary shall prepare and keep up to date an inventory of all of the property of the Commission.

7. The fiscal year of the Commission shall begin July 1 of each year and end June 30 of the next succeeding year.

ARTICLE VIII

ANNUAL REPORT

1. The Commission shall make and transmit annually on or before April 1 to the Governors of the states signatory to the Upper Colorado River Basin Compact and to the President of the United States a report covering the activities of the Commission for the water year ending the preceding September 30.

2. The annual report shall include among other things the following:

- (a) The estimated budget;
- (b) All hydrologic data which the Commission deems pertinent;

- (c) Estimates, if any, of the Commission forecasting water run-off;
- (d) Statements as to cooperative studies of water supplies made during the preceding water year;
- (e) All findings of fact made by the Commission during the preceding water year;
- (f) Such other pertinent matters as the Commission may require.

ARTICLE IX

SEAL

1. The seal of the Commission shall be a circular seal with the words "Upper Colorado River Commission" imprinted around the border and the word "Seal" in the center thereof.

2. The Secretary of the Commission shall have custody of the seal of the Commission.

ARTICLE X

MISCELLANEOUS

1. The Commission and its Secretary shall on request make available to the Governor of each of the states signatory to the Upper Colorado River Basin Compact any information within its possession at any time, and shall always provide free access to its records by the Governors of such states, or their representatives, or authorized representatives of the United States of America. The cost of making information available shall be borne by the person or government requesting such information.

2. All contracts or other instruments in writing to be signed for and on behalf of the Commission, except matters relating to the receipt or disbursement of funds, shall be signed by the Chairman or Vice-Chairman and the Secretary. When necessary the seal of the Commission shall be affixed thereto.

3. Except as otherwise provided by the Compact or herein, meetings of the Commission shall be in accordance with Robert's Rules of Order.

ARTICLE XI

AMENDMENTS TO BY-LAWS

1. Amendments to the By-Laws may be made at any meeting of the Commission provided notice of the proposed amendment shall have been given in the notice of the meeting.

2. Unless a proposed amendment to the By-Laws is unanimously agreed to by all five members of the Commission, action on the proposed amendment shall go over to a succeeding meeting of the Commission at which meeting the concurrence of four members of the Commission shall be necessary to the adoption of the amendment.

APPENDIX F

AUDIT

WALTER E. DALBY
Certified Public Accountant
Grand Junction, Colorado

November 4, 1950

Upper Colorado River Commission
Grand Junction, Colorado

I have examined the balance sheets of the General Fund and the Property and Equipment Fund of the Upper Colorado River Commission as of September 30, 1950, and the related statements of revenue and expense for the period from inception of the Commission, August 9, 1949, to September 30, 1950. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as I considered necessary in the circumstances.

In my opinion, the accompanying balance sheets and statements of revenue and expense present fairly the financial position of the Upper Colorado River Commission at September 30, 1950 and the results of its operations for the period from inception, August 9, 1949, to September 30, 1950.

/s/ WALTER E. DALBY
Certified Public Accountant

BALANCE SHEET—GENERAL FUND UPPER COLORADO RIVER COMMISSION

September 30, 1950

ASSETS			
CASH			
Office cash fund	\$	14.13	
Cash on hand for deposit		101.35	
Demand deposit		42,587.47	\$42,702.95
			<hr/>
RETURNABLE DEPOSIT—United Air Lines			425.00
ACCOUNT RECEIVABLE—employee			16.45
			<hr/>
			\$43,144.40
			<hr/> <hr/>

LIABILITIES, RESERVES, AND FUND BALANCE

ACCOUNTS PAYABLE			
for supplies and expenses			\$ 3,137.52
			<hr/>
ACCRUED SALARIES			2,349.16
			<hr/>
TOTAL LIABILITIES			\$ 5,486.68

RESERVES—applicable to fiscal year 1950-1951:

For encumbrances \$ 704.22

For revenue and expenses:

Revenue

received \$46,470.26

Less revenue

in budget 45,700.00 \$ 770.26

Appropriations

in budget \$45,700.00

Less actual

expense 10,640.88 35,059.12 35,829.38 36,533.60

UNAPPROPRIATED FUND BALANCE

Excess of revenues over expenditures from
inception, August 9, 1949, to June 30,
1950 (included Blaney Fund in the
amount of \$417.32)

1,124.12

\$43,144.40

BALANCE SHEET—PROPERTY AND EQUIPMENT FUND
UPPER COLORADO RIVER COMMISSION

September 30, 1950

ASSETS

PROPERTY AND EQUIPMENT—at cost

Furniture and fixtures	\$ 4,152.78
Automobile	2,765.17
Engineering equipment	531.25
	<u>\$ 7,449.20</u>

FUND BALANCE

FUND BALANCE

Investment in property and equipment	<u>\$ 7,449.20</u>
--------------------------------------	--------------------

REVENUE AND EXPENSE STATEMENT
UPPER COLORADO RIVER COMMISSION
From inception, August 9, 1949, to June 30, 1950

	ACTUAL AMOUNT	BUDGET AMOUNT	ACTUAL AMOUNT OVER- UNDER*
Revenues:			
Assessments	\$30,000.00	\$30,000.00	
Cash transferred from Blaney Fund	417.32	—0—	\$ 417.32
TOTAL REVENUE	\$30,417.32	\$30,000.00	\$ 417.32
Expenses:			
Personal services:			
Administrative salary	\$ 6,874.98		
Engineering salary	2,768.79		
Clerical salaries	1,528.19		
	\$11,171.96	\$12,985.00	\$ 1,813.04*
Travel:			
Automobile expense	\$ 226.78		
Transportation, hotel, meals, etc.	3,675.19		
	\$ 3,901.97	7,940.00	4,038.03*
Current expenses:			
Reporting	\$ 2,999.08		
Telephone and telegrams	216.56		
Office supplies and expenses	611.96		
Moving expense	770.03		
Insurance	337.41		
Miscellaneous expense	36.00		
Accounting services	100.00		
	\$ 5,071.04	1,955.00	3,116.04
Capital outlay:			
Automobile	\$ 2,765.17		
Furniture and fixtures	3,494.26		
Engineering equipment	4.25		
	\$ 6,263.68	7,120.00	856.32*
Printing expense—See note	\$ 2,884.55		2,884.55
TOTAL EXPENSES	\$29,293.20	\$30,000.00	\$ 706.80*
EXCESS OF REVENUE OVER EXPENSES	\$ 1,124.12		\$ 1,124.12

Note: The major portion of printing expense was for the preparation of copies of the Annual Report of the Commission.

REVENUE AND EXPENSE STATEMENT
UPPER COLORADO RIVER COMMISSION
For the three months ended September 30, 1950

	ACTUAL AMOUNT	BUDGET AMOUNT	ACTUAL AMOUNT OVER- UNDER*
Revenues:			
Assessments	\$45,700.00	\$45,700.00	
Sale of reports	668.17		\$ 668.17
Sale of typewriter	100.00		100.00
Insurance premium refund	2.09		2.09
TOTAL REVENUE	\$46,470.26	\$45,700.00	\$ 770.26
Expenses:			
Personal services:			
Administrative salary	\$ 3,437.49		
Engineering salary	2,499.99		
Clerical salaries	1,075.26		
	\$ 7,012.74	\$35,510.00	\$28,497.26*
Travel:			
Automobile expense	\$ 225.25		
Transportation, hotel, meals, etc.	919.58		
	\$ 1,144.83	7,190.00	6,045.17*
Current expenses:			
Reporting	\$ 98.00		
Telephone and telegrams	195.34		
Office supplies and expenses	700.39		
Miscellaneous expense	15.00		
	\$ 1,008.73	2,000.00	991.27*
Capital outlay:			
Furniture and fixtures	\$ 779.61		
Engineering equipment	527.00		
	\$ 1,306.61	1,000.00	306.61
Printing expenses:	\$ 167.97		167.97
TOTAL EXPENSES	\$10,640.88	\$45,700.00	\$35,059.12
EXCESS OF REVENUE OVER EXPENSES	\$35,829.38		\$35,829.38

CASH RECEIPTS AND DISBURSEMENTS

UPPER COLORADO RIVER COMMISSION

From inception, August 9, 1949, to September 30, 1950

<hr/>		
Balance of cash and demand deposit at inception of the Commission		\$ —0—
Cash receipts:		
Assessments	\$75,700.00	
Sale of reports	668.17	
Cash transferred from Blaney Fund	417.32	
Sale of typewriter	100.00	
Insurance premium refund	2.09	76,887.58
		<hr/>
		\$76,887.58
Cash disbursements:		
Personal services	\$15,835.54	
Travel	4,804.47	
Current expenses	5,729.27	
Capital outlay	6,923.38	
Printing	450.52	
Returnable deposit	425.00	
Account receivable from employee	16.45	34,184.63
		<hr/>
Balance of cash and demand deposit September 30, 1950		<u><u>\$42,702.95</u></u>

INSURANCE COVERAGE
UPPER COLORADO RIVER COMMISSION

September 30, 1950

	TYPE OF COVERAGE	AMOUNT OF COVERAGE
Furniture and fixtures	Fire and comprehensive	\$6,000.00
Automobile	Comprehensive	Actual cash value
	Bodily injury and property damage	\$50/\$100,000
Treasurer	Fidelity Bond	\$40,000.00

APPENDIX G

UPPER COLORADO RIVER COMMISSION Key Gaging Stations

Unit of flow—1000 acre-feet

Ref. (1)	Stream (2)
1.	Animas River near Cedar Hill, N. M.
2.	Animas River at Durango, Colo.
3.	Animas River at Farmington, N. M.
4.	Ashley Creek near Jensen, Utah
5.	Ashley Creek at Sign of the Maine near Vernal, Utah
6.	Ashley Creek near Vernal, Utah
7.	Blacks Fork near Millburne, Wyo.
8.	Blacks Fork near Green River, Wyo.
9.	Blue River at Dillon, Colo.
10.	Broomfield Canal (See Citizens Ditch)
11.	Brush Creek near Jensen, Utah
12.	Burnt Fork near Burnt Fork, Wyo.
13.	Carter Creek at mouth near Manila, Utah
14.	††Citizens Ditch (Bloomfield Canal) near Turley, N. M. Diverting water around Blanco gage
15.	*Colorado River near Cameo, Colo.
16.	Colorado River near Cisco, Utah
17.	†Colorado River near Colo.-Utah State Line
18.	*Colorado River at Glenwood Springs, Colo.
19.	Colorado River at Hite, Utah
20.	Colorado River at Hot Sulphur Springs, Colo.
21.	(A) Colorado River at Lee Ferry, Arizona
22.	Colorado River at Lees Ferry, Arizona
23.	Cottonwood Creek near Orangeville, Utah
24.	Crystal River near Redstone, Colo.
25.	†Dirty Devil River at Hite, Utah
26.	††Dolores River near Cisco, Utah
27.	Dolores River at Dolores, Colorado
28.	Dolores River at Gateway, Colorado
29.	Duchesne River near Myton, Utah
30.	Duchesne River near Randlett, Utah
31.	Duchesne River near Tabiona, Utah
32.	Eagle River below Gypsum, Colo.
33.	East River at Almont, Colo.
34.	*East Fork of Smith Fork near Robertson, Wyo.

Drainage Area Sq. Miles (3)	Average Annual Historic Flow (4)	Period Covered by their Average (5)	Flows in Water Years (Provisional)	
			1949 (6)	1950 (7)
1,092	793.9	1914-48	945.1	464.9
692	650.5	1914-48	774.9	410.2
1,360	741.2	1914-48	861.0	395.0
386	59.7	1947-48	60.0	78.8
241	97.6	1940-48	104.6	118.3
101	77.2	1914-48	80.4	
156	113.2	1914-48	104.9	117.1
3,670	270.1	1948		
129	86.2	1910-48	94.8	71.1
255	34.3	1914-48	18.9	22.8
53	24.8	1914-48	28.1	20.8
110	55.6	1947-48	58.2	47.9
8,055	3,480.2	1914-48	3,341.0	2,557.0
24,100	6,131.0	1914-48	6,287.0	4,236.0
4,560	2,066.5	1914-48	2,048.0	1,476.0
76,600	10,980.0	1948	11,130.0	9,738.0
782	469.5	1914-48	478.0	155.9
108,989	13,633.8	1914-48	14,359.6	11,053.5
107,435	13,608.8	1914-48	14,340.0	11,040.0
200	74.6	1910-20,12-27,32-48	83.0	51.0
225	270.8	1936-48	262.3	245.6
			95.4	
556	351.8	1921-48	378.2	233.0
4,350	767.9	1914-48	818.7	378.3
2,705	426.8	1914-48	456.2	
3,820	632.1	1914-48	603.3	581.2
352	152.6	1914-48	182.0	201.5
957	511.8	1907-08	460.2	396.3
295	254.8	1910-13,16-20,34-48	244.4	219.8
53	32.4	1914-48	38.7	31.4

Ref. (1)	Stream (2)
35.	†East Fork Beaver Creek near Lonetree, Wyo.
36.	Elk River at Clark, Colo.
37.	Escalante River near Escalante, Utah
38.	††Escalante River near mouth, Utah
39.	Florida River near Durango, Colo.
40.	Fontenelle Creek near Fontenelle, Wyo.
41.	†Fontenelle Creek above irrigation, Wyo.
42.	Green River near Ashley Falls Dam site, Utah
43.	††Green River near Greendale, Utah
44.	Green River at Green River, Utah
45.	Green River at Green River, Wyo.
46.	Green River near Jensen, Utah
47.	Green River near Linwood, Utah
48.	Green River near Ouray, Utah
49.	Green River at Warren Bridge, Wyo.
50.	†Gunnison River near Grand Junction, Colo.
51.	Gunnison River near Gunnison, Colo.
52.	Gunnison River below Gunnison Tunnel, Colo.
53.	†Hams Fork above irrigation, Wyo.
54.	Henrys Fork at Linwood, Utah
55.	Henrys Fork near Lonetree, Wyo.
56.	LaPlata River at Colo.-N. M. State Line
57.	LaPlata River at Hesperus, Colo.
58.	Little Snake River near Dixon, Wyo.
59.	Little Snake River near Lily, Colo.
60.	†Little Snake River near Slater, Colo.
61.	Los Pinos River near Bayfield, Colo.
62.	††Los Pinos River at Colo.-N M. State Line near La Boca, Colo.
63.	Los Pinos River at Ignacio, Colo.
64.	†Mancos River near Towaoc, Colo.
65.	†McElmo Creek near Colo.-N M. State Line
66.	†McElmo Creek near Cortez, Colo.
67.	†Middle Fork Beaver Creek near Lonetree, Wyo.
68.	†Minnie Maud Creek near Myton, Utah
69.	Navajo Creek at Edith, Colo.
70.	North Fork Gunnison River near Somerset, Colo.
71.	†North Fork White River near Buford, Colo.
72.	North Piney Creek near Mason, Wyo.
73.	Paria River at Lees Ferry, Arizona

Drainage Area Sq. Miles (3)	Average Annual Historic Flow (4)	Period Covered by their Average (5)	Flows in Water Years (Provisional)	
			1949 (6)	1950 (7)
			7.8	6.35
206	257.5	1914-22,31-48	291.6	248.3
315	10.4	1943-48	16.6	
96	86.9	1910-12,17-24,27-48	104.1	42.6
224	42.6	1916-19,31-48	43.9	91.9
40,920	4,633.0	1914-48	4,897.0	5,511.0
7,670	e 1,273.3	1914-48	e 1,129.0	e 2,101.0
**	3,558.5	1947-48	3,408.0	4,097.0
14,300	1,518.8	1914-48	1,358.0	2,493.0
**	4,032.0	1948	4,820.1	5,461.0
468	355.1	1932-48	354.0	463.7
8,020	2,038.0	1914-48	2,119.0	1,387.0
1,010	624.0	1911-14,16-28,45-48	539.0	469.5
3,980	931.1	1943-48	1,118.0	607.0
530	66.3	1914-48	64.4	56.5
55	31.9	1914-48	31.7	29.6
331	29.5	1914-48	35.0	13.0
37	34.4	1917-48	47.0	20.4
1,028	414.9	1914-48	461.2	399.0
3,680	462.6	1914-48	536.4	442.0
285	166.3	1943-47		
284	266.4	1927-48	368.1	196.2
448	246.9	1914-48	282.4	53.1
550	49.2	1914-48	f 50.0	
233	40.8	1914-48	f 54.0	
			18.8	15.0
			25.6	
165	127.2	1914-48	120.4	66.0
521	339.6	1934-48	339.1	335.5
240				
58	36.3	1932-48	35.8	60.8
1,550	25.0	1914-48	19.6	13.5

Ref. (1)	Stream (2)
74.	†Pine Creek near Fremont Lake, Wyo.
75.	Pine Creek at Pinedale, Wyo.
76.	Plateau Creek near Cameo, Colo.
77.	Price River near Heiner, Utah
78.	Price River at Woodside, Utah
79.	Rio Blanco River at Pagosa Springs, Colo.
80.	Rito Blanco River at Pagosa Springs, Colo.
81.	Roaring Fork at Aspen, Colo.
82.	Roaring Fork at Glenwood Springs, Colo.
83.	San Juan River near Blanco, N. M.
84.	San Juan River near Bluff, Utah
85.	San Juan River at Farmington, N. M.
86.	San Juan River at Pagosa Springs, Colo.
87.	San Juan River at Rosa, N. M.
88.	San Juan River at Shiprock, N. M.
89.	San Miguel River near Placerville, Colo.
90.	San Rafael River near Green River, Utah
91.	Savery Creek near Savery, Wyo.
92.	Sheep Creek near Manila, Utah
93.	Sheep Creek at mouth near Manila, Utah
94.	(B) Sheep Creek Upper Canal, near Manila, Utah
95.	(B) Sheep Creek Lower Canal, near Manila, Utah
96.	Slater Fork near Slater, Colo.
97.	†Snake River near Montezuma, Colo.
98.	†South Fork White River near Buford, Colo.
99.	††Spring Creek at Colo.-N.M. State Line near La Boca, Colo.
100.	Strawberry River at Duchesne, Utah
101.	(C) Sum of San Juan, Rio Blanco and Rito Blanco Rivers at Pagosa Springs, Colo.
102.	Taylor River at Almont, Colo.
103.	Tenmile Creek at Dillon, Colo.
104.	Tomichi Creek at Gunnison, Colo.
105.	Uinta River near Neola, Utah
106.	Uncompahgre River near Colona, Colo.
107.	†West Fork Beaver Creek near Lonetree, Wyo.
108.	West Fork Smith Fork near Lonetree, Wyo.
109.	White River near Meeker, Colo.
110.	White River near Watson, Utah
111.	Whiterocks River near Whiterocks, Utah

Drainage Area Sq. Miles (3)	Average Annual Historic Flow (4)	Period Covered by their Average (5)	Flows in Water Years (Provisional)	
			1949 (6)	1950 (7)
118	95.8	1914-48	86.8	113.2
604	183.4	1914-48	160.6	117.2
430	89.8	1914-48	85.6	80.8
1,500	37.3	1946-48	84.1	67.7
58	67.0	1936-48		
23	14.0	1936-48		
109	158.0	26 yrs.	75.7	50.3
1,460	1,026.8	1914-48	958.6	798.1
3,558	1,218.7	1914-48	1,389.4	535.1
23,010	2,214.0	1914-48	2,523.0	902.3
7,245	2,051.0	1914-48	2,216.0	942.2
298	287.4	1936-48	370.4	
1,990	926.4	1914-48	1,063.6	477.3
12,876	2,007.7	1917-20,22-25,26-31, 33-48	2,321.1	959.9
308	191.6	1943-48	199.8	122.8
1,690	1,686.9	1910-18,46-48	130.8	56.9
330	76.0	1942-46, & 48	105.0	92.3
46	14.2	1944-48	16.1	6.8
111	24.7	1947-48	25.0	16.6
161	51.3	1932-48	76.3	67.9
59	44.9	1943-45		
1,040	113.7	1914-48	134.2	130.2
379	389.7	1915-48		
440	252.0	1911-48	242.7	224.4
113	88.3	1911-19,30-48	94.4	86.1
1,020	131.0	1939-48	187.4	81.5
181	123.8	1925-26,30-48	152.9	137.6
437	213.8	1918-48	230.8	126.2
			12.9	10.9
37	16.2	1914-48	14.8	16.8
762	461.5	1914-48	522.8	429.2
4,020	574.7	1914-48	573.4	446.8
115	92.8	1914-48	93.8	

Ref. (1)	Stream (2)
112.	Willow Creek near Ouray, Utah
113.	Yampa River near Maybell, Colo.
114.	Yampa River at Steamboat Springs, Colo.

*This is a U. S. Geol. Surv. station but is not required at the present time for administration by the Upper Colorado River Commission.

**Drainage area not shown in latest U. S. Geol. Surv. water supply paper available.

†This station is to be installed or reestablished and operated by the U. S. Geol. Surv. for administration purposes by the Upper Colorado River Commission.

††This station has recently been installed.

(A) Lee Ferry one mile downstream from the mouth of the Paria River is the 1922 "Compact Point," and the discharge at this point is taken as the sum of Nos. 22 and 73.

Drainage Area Sq. Miles (3)	Average Annual Historic Flow (4)	Period Covered by their Average (5)	Flows in Water Years (Provisional)	
			1949 (6)	1950 (7)
			27.5	
3,410	1,183.2	1914-48	1,322.0	952.0
604	344.1	1914-48	391.2	287.6

(B) Discharge measurements reported in U. S. Geol. Surv. Water Supply Paper 1059 (1946) p. 384.

(C) This item will be discontinued and the discharge for each stream reported in future tables.

e Flow for the years 1940 to date are estimated by correlation with flow at Green River, Utah.

f This station is not now operating but is to be reinstalled. These flows are estimated.

Note: The table, page 13, of the First Annual Report for Item 29 shows runoff for 1948 as 6,587.0. U. S. Geol. Surv. Water Supply Paper 1119 shows the revised value of 6,554.0

TRANSMOUNTAIN DIVERSIONS IN COLORADO

Ditch or Tunnel	Stream	Acre-feet Year	
		1949	1950
Alva B. Adams Tunnel	Shadow Mountain Res.	17,476	26,369
Berthoud Pass Ditch	Fraser River Trib.	327	490
Eureka Ditch	Tonahutu Creek	91	77
Grand River Ditch	Colorado River Trib.	17,194	16,161
Moffat Tunnel (E. Portal)		24,664	29,565
*Fraser-Jim Creek Ditch	Fraser River	(9,950)	(13,661)
*South Ranch Cr. Ditch	South Ranch Creek	(1,416)	(1,020)
*Vasquez Creek Ditch	Vasquez Creek	(13,513)	(14,983)
Independence Pass Tunnel (Twin Lakes Tunnel)	Roaring Fork Trib.	38,193	34,880
Sub Total (Table 5)	Upper Colorado River	97,945	137,806
Williams Fork Tunnel (Jones Pass)	Williams River	1,889	9,090
Boreas Pass Ditch	Blue River	none	69
Columbine Ditch	Tenmile Creek Trib.	none	1,268
Fremont Pass Ditch	Tenmile Creek	none	none
Ewing Ditch	Eagle River	1,337	783
Wurtz Ditch	Eagle River	2,687	1,987
Busk-Ivanhoe Tunnel	Fryingpan River	4,295	3,406
Larkspur Ditch	Tomichi Creek	394	24
Sub Total above Colo.-Utah Line		10,602	16,627
Fuchs Ditch (Weminuche Pass) (Table 2)	N. F. Los Pinos River	512	361
Raber-Lohr Ditch	Los Pinos River		976
Treasure Pass Ditch	San Juan River	none	208
Treasure Pass Ditch	San Juan River		69
Sub Total		512	1,614
Grand Total		109,059	156,047

*Supply Ditch to Moffat Tunnel

TRANSMOUNTAIN DIVERSIONS IN UTAH

<u>Ditch or Tunnel</u>	<u>Location</u>	<u>Acre-feet Year 1950</u>
Ephraim Tunnel	near Ephraim	3,102
Reeder Ditch	near Spring City	251
Twin Creek Tunnel	near Mt. Pleasant	163
Horseshoe Tunnel	near Ephraim	698
Cedar Creek Tunnel	near Spring City	313
Spring City Tunnel	near Spring City	1,370
Fairview Ditch	near Fairview	1,490
Candland Ditch	near Mt. Pleasant	138
Black Canyon Ditch	near Spring City	206
Larsen Tunnel	near Ephraim	751
Madsen Ditch	near Ephraim	7
John August Ditch	near Ephraim	182
Coal Fork Ditch	near Mt. Pleasant	159
Lower Hobble Creek Ditch	near Heber	248
Upper Hobble Creek Ditch	near Heber	389
Strawberry River and Willow Creek Ditches	Strawberry River, Willow Creek	2,730
Strawberry Tunnel*	Strawberry River	69,140
Total		81,337

*Diversion in 1949; 63,270 acre-feet.

Others in above table were not measured in 1949.

1900
 1901
 1902
 1903
 1904
 1905
 1906
 1907
 1908
 1909
 1910
 1911
 1912
 1913
 1914
 1915
 1916
 1917
 1918
 1919
 1920

The following is a list of the names of the persons who have been elected to the office of Mayor of the City of Grand Junction, Colorado, for the term ending on the 1st day of January, 1921. The names are given in the order in which they were elected, and the year in which they were elected is given in parentheses.

1. (1900) John W. Smith
 2. (1901) John W. Smith
 3. (1902) John W. Smith
 4. (1903) John W. Smith
 5. (1904) John W. Smith
 6. (1905) John W. Smith
 7. (1906) John W. Smith
 8. (1907) John W. Smith
 9. (1908) John W. Smith
 10. (1909) John W. Smith
 11. (1910) John W. Smith
 12. (1911) John W. Smith
 13. (1912) John W. Smith
 14. (1913) John W. Smith
 15. (1914) John W. Smith
 16. (1915) John W. Smith
 17. (1916) John W. Smith
 18. (1917) John W. Smith
 19. (1918) John W. Smith
 20. (1919) John W. Smith
 21. (1920) John W. Smith

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