

The Colorado Water Conservation Board
212 State Office Building
Denver, Colorado

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REPORT ON WESTERN SLOPE
SURFACE WATER STUDY

Actions of Conference and
Conciliation Committees, and
Colorado Water Conservation Board;
Synopsis of Studies;
Additional Surveys for
Individual Projects;
Expenditure of Funds

By
Ivan C. Crawford
Director
Colorado Water Conservation Board

January 6, 1956

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OF

COLORADO WATER CONSERVATION BOARD

MEMBERS

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Robert Delaney
George Cory
H. H. Christy

ALTERNATES

Ivan C. Crawford
Glenn Saunders
F. C. Merriell
W. M. Williams
Simon Elliot

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January 6, 1956

Hon. Edwin C. Johnson, Governor of Colorado
 Hon. David A. Hamil, Speaker of the) 40th General Assembly
 House of Representatives) 2d Session
 Hon. Frank L. Gill, President pro tem) State of Colorado
 of the Senate)
 Hon. J. E. Whitten, State Engineer, State of Colorado
 Hon. W. M. Williams, Director, Colorado State Planning Commission
 Hon. Thomas L. Kimball, Director, Colorado Game and Fish Department

Gentlemen:

Complying with Chapter 148, Article 1, Section 16, Colorado Revised Statutes 1953, I am transmitting this report covering "a study of the water resources available from surface supplies in that part of Colorado which lies west of the continental divide, and a study of the present and potential uses thereof to the full extent necessary to a unified and harmonious development of those waters for beneficial use in Colorado to the fullest extent possible under the law, including the law created by compacts affecting the use of said water."

The report is composed of three parts: (a) Report covering actions of the Colorado Water Conservation Board, Conference Committee and Conciliation Committee, water surveys and proposed projects, and how the appropriation was spent; (b) Report of the engineering firm of Leeds, Hill and Jewett; and (c) Report of the economic survey by the University of Colorado.

Respectfully yours,

COLORADO WATER CONSERVATION BOARD

By Ivan C. Crawford
 Ivan C. Crawford, Director

INTRODUCTION

The 39th General Assembly of the State of Colorado enacted House Bill No. 457 entitled "An Act Relating to Water Development and the Investigating and Reporting of Water Resources and Uses, and Making an Appropriation for Carrying out the Purposes of this Act." The Act called for a "study of the water resources available from surface supplies in that part of Colorado which lies west of the continental divide, and a study of the present and potential uses thereof to the full extent necessary to a unified and harmonious development of those waters for beneficial use in Colorado to the fullest extent possible under the law, including the law created by compacts affecting the use of said water. The studies so to be made shall include analyses of the extent to which water may be transferred from one watershed to another within the state without injury to the potential economic development of the natural watershed from which water might be diverted for the development of another watershed."

The Act carried an appropriation of \$100,000 to accomplish the objectives and was approved on March 27, 1953. Conforming to the instructions contained in the Act, the Colorado Water Conservation Board entered into two contracts: One with Leeds, Hill and Jewett, Consulting Engineers of Los Angeles, to make a study of the water resources as directed in the above quotation; and a second with the University of Colorado for an economic

potential survey for that portion of Colorado located west of the Continental Divide. The first contract called for a maximum not to exceed \$50,000. Leeds, Hill and Jewett completed the study at a cost to the State of \$44,123.57. The contract was entered into on the 18th day of May, 1953. The firm agreed to complete the study by November 1, 1953, and, in fact, did so.

The agreement with the University of Colorado became effective on the 6th day of May, 1953. Under the terms of the contract the Board agreed to reimburse the University for the actual cost to the University of the survey and report "but not to exceed the total sum of \$12,500.00." The actual cost was \$12,322.61 and the work was completed in November, 1953.

In each case, the contractors were informed before the completion date that additional time would be allowed, if necessary, to complete the work.

THE HILL REPORT

General. One very important feature of the Hill Report is the study of the cost per acre of placing water on future irrigation projects. Data secured from the Bureau of Reclamation, then unpublished and covering some 42 projects, is the basis on which this report comes to the conclusion that if land is subsidized in excess of \$600 per acre, there is not water enough on the Western Slope to irrigate all the land there available.

The problem, according to the Report, is one of policy, a policy to be set by the Federal Government. To what extent will

it cooperate financially in construction of irrigation projects? In other words, how much may an acre of land be subsidized in addition to the waiver of interest on the construction costs?

Further water studies on the Eastern Slope will be necessary. However, these studies will not cover the entire area. For each proposed irrigation project a separate study must be made because finding that an adequate water supply is available is a prerequisite to a favorable feasibility report by the Bureau of Reclamation on a project. A portion of the appropriation has been spent for this purpose as is explained on Pages 13 and 14.

Findings of the Hill Report.

1. Attention is drawn to the average annual decrease of water yield on the Western Slope when the years 1930-1952 are considered rather than the period 1914-1945. For the longer period of time, Colorado's share of the Upper Colorado River water would amount to 3,855,375 acre-feet. If the 22-year period is considered, then the Report sets the available Colorado water at 3,100,000 acre-feet.

2. The Report finds some water available for transmountain diversion and states that such water is located:

(a) In the Blue River Basin and that either a transmountain diversion for Denver or a transmountain diversion for the proposed Blue-South Platte Project is physically possible, but not both;

(b) In the Fryingpan River Basin for the proposed Fryingpan-Arkansas Project in the amount of approximately 70,000 acre-feet; and

(c) In the Gunnison River Basin with an upper limit of some 500,000 acre-feet.

The Report estimates the cost of bringing water to the proposed Blue-South Platte Project at a cost of approximately \$1,000 per acre. (This Report was rendered before the settlement between Denver and the United States Government of claims to water in the Blue River drainage. Under that agreement the waters of the Blue River go to Denver and are not to be used for irrigation of farm lands.)

The cost allocated to irrigation in the Fryingpan-Arkansas Project is about \$480 per acre when computed on a basis of 114,500 acres to be benefited by this supplemental water. (The sponsor of the project and the Bureau of Reclamation claim the acreage should be 310,000, and the resulting cost on this basis would be \$180.) A transmountain diversion from the headwaters of the Gunnison River to the Eastern Slope would cost between \$1,250 and \$2,500 per acre.

3. In considering the water supplies of the Western Slope, the Report gives consideration to a supply for the development of the oil shale industry.

4. This Report brings out clearly that, founded upon the only supporting data available, i.e., studies of the Bureau of

Reclamation, the limiting factor in the irrigation of land in Colorado is the cost of getting the water to the land, as discussed on Page 2.

ECONOMIC POTENTIAL REPORT

The Bureau of Business Research at the University of Colorado was asked to prepare an analysis of the economic potential of Western Colorado. This it did in a report of 265 pages wherein the following topics were treated:

1. Western Colorado - Its Growth to Date
2. Statistical Population Forecasts of Western Colorado
3. Agriculture
4. Timber
5. Minerals
6. Coal, Oil Shale and Liquid Fuels
7. Tourist Trade
8. Related and Other Industries
9. Population

As a conclusion the report estimates that the total population of the Western Slope may possibly, at some time in the future, amount to 2,000,000 persons. The last paragraph of the Report follows:

"The population figure of 2,000,000 for Western Colorado should be considered as a potential rather than a forecast. It is based upon a consideration of what appears possible. Based upon the many assumptions presented in this report, the potential population of Western Colorado may some day reach this figure."

THE CONFERENCE COMMITTEE

Organization. At the February 17, 1953 meeting of the Colorado Water Conservation Board, the Board decided to set up a committee to be known as the Colorado Conference Committee to study "the request of the City and County of Denver for federal funds with which to divert approximately 177,000 acre-feet of water from the Blue River in Western Colorado . . .; the Committee to have full power to employ whatever engineers and obtain whatever engineering data they may determine as being necessary for them to reach a conclusion in said matter and to make a recommendation to this Board; with the further understanding that the Colorado representative on the Upper Colorado River Commission be requested to make every effort to defer any Congressional action, or action by the Upper Colorado River Commission on the Colorado River Storage Project bill until such Committee makes its report and the Colorado Water Conservation Board thereafter takes action on the same."

According to the motion, the Committee was to consist of five members: Two from the Eastern Slope, two from the Western Slope, and the Vice Chairman of the Colorado Water Conservation Board. The members from the Western Slope were, in the beginning, F. C. Merriell and George Cory; from the Eastern Slope, N. R. Petry and H. H. Christy; and George J. Bailey, Vice Chairman of the Board, was Chairman of the Committee, with Ivan C. Crawford,

Director of the Board, as Secretary and to serve for Mr. Bailey in his absence.

At the May 18, 1953 meeting of the Colorado Water Conservation Board, alternates were approved for members of the Conference Committee as follows:

Glenn Saunders for Mr. Petry

Simon Elliot for H. H. Christy

Senator Lew Williams for George Cory

Frank Merriell for Robert Delaney

Robert Delaney had previously replaced Mr. Merriell as a member of the Committee.

Beginning with February 25, 1953 and ending December 10, 1953, the Committee held eleven meetings.

At the final meeting of the Committee, findings and recommendations were adopted as follows:

Findings and Recommendations of
Colorado Conference Committee
December 10, 1953

1. Mr. Petry moved that the Colorado Conference Committee make findings and recommendations to the Colorado Water Conservation Board for the use of that Board at its meeting December 11, 1953, as follows:
2. We find the Hill Report correct in its finding that regulatory storage to take care of Lee Ferry requirements is necessary for full development of Colorado's share of Colorado River water.
3. We desire that a substantial portion of that storage be established in Colorado.

4. That Colorado should insist on provision for substantial storage in Colorado as a condition of its approval of the Colorado River Storage Project Bill.
5. As a further condition for its approval of the storage bill that Colorado should insist on explicit language to insure that downstream storage built preceding Colorado development could not have any priority to interfere with upstream domestic, agricultural or industrial development.
6. That Colorado should insist, as a further condition of approval of the storage bill, that explicit and binding language be included therein, which would clearly make available the net revenue of first phase construction at an early period after completion of first phase projects for the benefit of participating projects.
7. That Colorado favor the inclusion of the DeBeque Reservoir as a first phase project subject only to submission of a feasibility report by the Bureau of Reclamation.
8. That Colorado favor the construction of Curecanti reservoir as a first phase project with such modification as might be necessary to assure its feasibility.
9. That the Water Conservation Board approve the Hill Report as to availability of water supply. (Emphasis supplied)
10. That this Committee approves constructing Denver's Blue River Transmountain Diversion within the limitations of total supply contained in the Hill Report, by Federal financing, whether such financing is provided in the current storage project bill or by some other means to be selected by the proponent of the project and that Denver participate in regulation to meet demands at Lee Ferry or other Colorado River commitments to the full extent required to meet Denver's share of Lee Ferry or Colorado obligations as ultimately determined with reference to all adjudicated rights affected.
11. We recommend to the Water Board that it be understood that the Water Board will make investigations of further plans for water use in Colorado when conditions change or additional data becomes available.

A motion to make the above Findings and Recommendations to the Colorado Water Conservation Board was made by Mr. Petry, seconded

by Mr. Christy, and passed by a vote of 3 to 2. The Chairman voted on account of an equal division of the other members of the Committee.

COLORADO WATER CONSERVATION BOARD ACTION ON
FINDINGS AND RECOMMENDATIONS OF THE CONFERENCE COMMITTEE

On December 11, 1953, the Colorado Water Conservation Board met to consider the action of the Colorado Conference Committee of the preceding day. The Findings and Recommendations of the Colorado Conference Committee were read and discussed in considerable detail by members of the Board, representatives of the Colorado River Water Conservation District and the Middle Park Water Conservancy District. A motion was carried by a vote of 8 to 4 that the Board adopt the "findings and recommendations of the Colorado Conference Committee in the form in which they have been presented here, as the policy of this Board and the basis of the instructions of the State of Colorado to its representative on the Upper Colorado River Commission."

CONCILIATION COMMITTEE

In an attempt to resolve the Denver-West Slope controversy relative to the waters of the Blue River, the Colorado Water Conservation Board, at its meeting of December 30, 1953, authorized the formation of a Conciliation Committee, this Committee to consist of "five disinterested citizens highly respected in their communities and who will approach the problem in a

diplomatic and conciliatory frame of mind, who will make recommendations relative to the Denver-West Slope controversy at a very early date, to the Board. This Committee is to be selected as follows:

- "(a) Two by the Denver Water Board from citizens of Denver who have a wide acquaintance with Western Colorado people;
- "(b) Two from Western Colorado who will be recommended by the Colorado River Water Conservation District and approved by the Western Slope members of the Colorado Water Conservation Board, and who have a wide acquaintance in Eastern Colorado;
- "(c) These four shall meet and select a fifth member from any portion of the State."

The members of this Committee were: For the Western Slope, Silmon Smith and Frank Delaney; For Denver, John J. Sullivan and Robert Stearns. These four selected the fifth member, Barney L. Whatley.

After a meeting extending over several days, the Committee found itself unable to come to any agreement and dissolved.

COLORADO WATER CONSERVATION BOARD MEETING OF JANUARY 14, 1954

The Conciliation Committee, as noted above, was unable to effectuate an agreement in the Denver-West Slope water controversy and this was reported to the Colorado Water Conservation Board at its meeting of January 14, 1954. At this meeting a resolution was passed, three paragraphs of which follow:

"11. Denver, the Capitol city of Colorado, desires to divert water from the Blue River, a tributary of the Colorado River, for use for municipal and industrial purposes in the metropolitan Denver area. The rights of Denver to take and divert such water are alleged to be in conflict with rights for the use of water stored in Green Mountain Reservoir and taken through the Green Mountain power plant for the generation of power. Green Mountain Dam, Reservoir and Power Plant constitute a unit of the Colorado-Big Thompson Project of the United States Bureau of Reclamation. The controversy over the relative rights of Denver and the Green Mountain Project are in litigation in a law suit now pending in the Supreme Court of the State of Colorado and in another law suit pending in the United States District Court for the District of Colorado. It would be improper for this Board to attempt to invade the process of the courts or to influence the pending litigation. The Board has no intention of doing either. The feasibility of the proposed Denver-Blue River diversion depends, among other things, on the outcome of this litigation, or on some alternative thereto which satisfactorily protects the Colorado-Big Thompson Project. Upon the condition that the legal availability of a reasonable quantity of water for the Denver-Blue River diversion be established, either by litigation or some other arrangement, and the condition that such project be otherwise feasible, the Board approves the Denver-Blue River Project for inclusion as a participating project in the authorization of the Colorado River Storage Project or for such other Federal legislative or administrative action as may be requested by Denver. (Emphasis supplied)

"12. The Board recommends that Denver and the representatives of the West Slope in Colorado make every effort to arrive at a harmonious solution of the unfortunate transmountain diversion controversy which for years has created dissension in Colorado. The Board pledges that it and its staff will be ready to assist in the amicable settlement of this prolonged conflict.

"13. The Director of the Board and the Colorado members of the Upper Colorado River Commission are directed to do all things necessary and proper to effectuate this resolution."

Paragraph 11 is of special importance because, based on this, provision was made in several of the Colorado River Storage Project bills for Federal Departments to deal with Denver with regard to water and land under those departments.

S. 500, 84th Congress, 1st Session, contained a section which reads as follows:

"Sec. 11. The appropriate agencies of the United States are authorized to convey to the city and county of Denver, Colorado, for use as a part of its municipally owned water system, such interests in lands and water rights used or acquired by the United States solely for the generation of power and other property of the United States as shall be required in connection with the development or use of its Blue River project, upon payment by Denver for any such interest of the value thereof at the time of its acquisition by Denver, and provided that any such transfer shall be so limited as not to preclude the use of the property other than water rights for the necessary functions of the United States Government."

H.R. 4488 introduced by Congressman Rogers, and H.R. 270 by Congressman Dawson of Utah, each contain sections identical with Section 11 of Senate Bill 500, as does H.R. 3383 introduced by Congressman Aspinall.

AGREEMENT ON BLUE RIVER DIVERSION

In October, 1955, the Federal Government, through the Department of Justice, the City and County of Denver, the City of Colorado Springs, the Northern Colorado Conservancy District, the Colorado River Conservation District, the Grand Valley Water Users Association, Grand Valley Irrigation Company, Orchard Mesa Irrigation District and the Palisade Irrigation District made a stipulation with regard to the use of the waters of the Blue River, and approved in advance the Final Judgment and Final Decree of the U. S. District Court of Colorado rendered on October 12.

WATER SUPPLY SURVEYS FOR PROPOSED PROJECTS

The Gunnison River Project Report of 1951 and the Cliffs-Divide Project Report of 1953 furnished data on some 32 proposed

irrigation projects. The reports are of a reconnaissance nature, that is, they have not been made in detail. In every case, the most important feature is, of course, the nature of the water supply of the project; and in each case the study covers only the water supply of the individual project. The Colorado Water Conservation Board diverted \$8,000 in F.Y. 1955 which was matched by the U. S. Geological Survey and was used to install gaging stations and secure flow data for several of these projects. \$16,000 was diverted for this same purpose for F.Y. 1956. In all, \$24,000 from this appropriation has been devoted to this work and this amount was matched by the U. S. Geological Survey. All proposed projects are located on the Western Slope.

HOW THE APPROPRIATION WAS SPENT

Leeds, Hill & Jewett	\$44,123.57	
For amount due on contract, salaries and travel--in connection with the Hill Report		
University of Colorado	12,322.61	
For Report on Economic Potential of Western Colorado		
Printing and Postage	3,418.00	
In connection with above mentioned reports		
Conference Committee expenses	2,421.12	
Includes secretarial services in connection with Conference Committee meetings, travel of members and meals and lodging of members		
Total for Contracts and Expenses		\$62,285.30
Cooperative agreement with U.S.G.S. for Fiscal Year 1955	8,000.00	
Cooperative agreement with U.S.G.S. for Fiscal Year 1956	<u>16,000.00</u>	
Total for U.S.G.S.		<u>24,000.00</u>
Grand Total Expended		\$86,285.30
Amount of Appropriation		\$100,000.00
Amount Expended		<u>86,285.30</u>
Balance returned to General Fund as provided in the Appropriation Act		\$13,714.70

EXPENDITURES UNDER H.B. 457, 39TH. GENERAL ASSEMBLY, 1ST. SESSION

