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COLORADO WATER CONSERVATION BOARD
102 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

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CLOSED BASIN PROJECT

The Closed Basin project lies in south central Colorado in the San Luis Valley. The project is bounded on the east and north by the Sangre de Cristo mountain range and on the west and south by the Rio Grande River. The project was authorized by the Congress in 1972. The Rio Grande Water Conservation District was created by an act of the legislature in 1967 and is acting as the sponsoring agency for the project. The district includes the counties of Alamosa, Conejos and Rio Grande and parts of Mineral and Saguache. The project is also being supported by the Conejos Water Conservancy District, the San Luis Valley Water Conservancy District, the Rio Grande Water Users Association and the San Luis Valley Irrigation Well Owners, Inc.

Plan of Development

The project would salvage unconfined ground water and available surface flows in the Closed Basin now being lost through evaporation. The salvage water would be delivered through a conveyance channel to the Rio Grande River below Alamosa.

The present plan contemplates salvaging about 100,800 acre-feet of water annually, of which about 85,600 acre-feet would be pumped ground water and 15,200 acre-feet would be surface water. The project would be constructed in successive stages and would include a main conveyance channel about 44 miles long, beginning where Saguache Creek crosses State Highway 17, thence southeast along the west side of San Luis Lake and south of the confluence of the Rio Grande with La Jara Creek. Outlets would be provided at the lower end of the main channel to provide water for the Alamosa National Wildlife Refuge. About 136 shallow wells would be constructed and pumped to salvage the waters now being evaporated in the Closed Basin.

The Mishak National Wildlife Refuge would be established as a part of the project and additional water would be provided for the existing Alamosa National Wildlife Refuge. Recreational facilities would be provided at San Luis Lake.

The salvaged waters would be used to ameliorate the effects of the Mexican Water Treaty and the Rio Grande Compact. This would mean

that existing water uses in Colorado could continue with little or no curtailment. At the present time, existing uses in Colorado are being curtailed to meet treaty and compact requirements.

Project Costs (Estimated)

Water salvage	\$24,652,900
Fish and wildlife enhancement	1,555,100
Recreation	<u>1,075,000</u>
Total Cost	\$27,283,000

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Water allocation

Mexican Treaty	60,000 a.f.
Irrigation and compact debits	35,500 a.f.
Alamosa National Wildlife Refuge	<u>5,300 a.f.</u>
Total	100,800 a.f.

Benefit-cost ratio 1.6 to 1

Total annual benefits \$2,231,000

Environmental Impact

The environmental impact occasioned by the proposed project would be favorable. The project would cause the Rio Grande River to become a continuous live stream throughout the Rio Grande Gorge, an area which is a part of the National Wild and Scenic Rivers system. Much of the Closed Basin area is now virtually sterile as a result of salt accumulations. The project will reverse the salt trend and permit the re-establishment of native vegetation and native wildlife. Unlike many projects of this nature, no resources would be irreversibly committed.

An additional beneficial effect will be the sustained flow in the channel of the Rio Grande downstream from Alamosa. This continuous flow will reduce siltation and aggradation in the channel, a condition which has resulted from upstream diversions. This continuous flow from the project will promote migratory bird and fish habitat and tend to restore the river to its earlier condition.

The Rio Grande Compact provides that the state of Colorado shall not be credited with any water delivered from the Closed Basin unless a proportion of sodium ions in such water shall be less than 45 percent of the total positive ions when the total dissolved solids in

such water exceeds 350 parts per million. - The project is designed to do and will meet these water quality standards.

Current Status

Write-in funds for advanced planning in fiscal year 1976 were included in the appropriation bill signed by the President on December 26, 1975. A total of \$125,000 was appropriated for fiscal year 1976 and the transitional quarter. Advance planning studies will begin in the Stage 1 portion of the Closed Basin during April, 1976.

Because of the opposition of some people in the San Luis Valley to the project, the state of Colorado independently and in concert with the United States Geological Survey has undertaken and completed an exhaustive research of the possible effect of the project on existing irrigation practices in the Closed Basin. This research, which was conducted over a considerable period of time and included the construction of an electric analog model, indicates that the project will have no adverse effect upon existing irrigation practices in the Closed Basin. In addition, the present plan of development provides for construction of the project in stages in order that the effect of each stage can be evaluated.

There is now pending in the United States Supreme Court a suit filed against Colorado by the states of Texas and New Mexico alleging that Colorado is in violation of the terms of the Rio Grande Compact. In 1967, the three states and the United States agreed to a stay of proceeding in the pending litigation in order to "afford a reasonable time for the interested parties to demonstrate the feasibility and imminence of an equitable administrative solution. In the meantime, the United States will explore the matter of an administrative solution in conjunction with the three states."

There appears to be only two feasible administrative solutions to the pending litigation. These are either to curtail water uses in Colorado, which is being done at the present time, or to construct the Closed Basin project to salvage waters now being nonbeneficially evaporated in the Closed Basin.

Local Support

Despite some opinions to the contrary, there is strong local support for the project. The project is being supported by the Rio Grande Water Conservation District, the Conejos Water Conservancy District, the San Luis Valley Water Conservancy District, the Rio Grande Water Users Association, the San Luis Valley Irrigation Well Owners, Inc., and numerous other organizations and entities. It is

a reasonable assumption that at least 90 percent of the water users in the San Luis Valley support the project.

The substantial support which has always existed for project construction has increased considerably in recent years. This increased support has resulted largely from the unfortunate effects of the pending case of Texas and New Mexico v. Colorado. As a result of this case, the Colorado State Engineer has been forced to curtail water uses in Colorado. This reduction in water diversions has caused severe financial hardships, particularly to well owners who for the most part have junior decrees. The well owners are now attempting to raise approximately one million dollars to purchase surface water rights to replace the junior water being pumped from wells. If the Closed Basin project were constructed, it would not be necessary for the well owners to bear this heavy financial burden.

Considerable additional support for the project by the valley residents came about through the incorporation of numerous safeguards in the authorizing legislation (P.L. 92-514; 86 Stat. 964), as follows:

1. No project wells, other than observation wells, shall be permitted to penetrate the aquiclude, or first confining clay layer.
2. Construction of any stage of the project after stage one can be undertaken only with the consent of the Colorado Water Conservation Board and the Rio Grande Water Conservation District.
3. There must be incorporated into the project plans a control system of observation wells which must be designed to provide positive identification of any fluctuations in the water table of the area surrounding the project attributable to the operation of the project or any part thereof.
4. The project facilities must be operated in a manner that will not cause the water table available for any irrigation or domestic wells in existence prior to the construction of the project to drop more than two feet, and in a manner that will not cause reduction of artesian flows in existence prior to the construction of the project.
5. Construction of the project may not be started until the state of Colorado agrees that it will convey to the United States easements and rights-of-way over lands owned by the state that are needed for project purposes and wildlife refuge areas. Acquisition of privately owned lands, where possible and consistent with the development of the project, shall be restricted to easements and rights-of-way in order to minimize the removal of land from local tax rolls.

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6. The authorizing act establishes an operating committee consisting of one member appointed by the Secretary of the Interior, one member appointed by the Colorado Water Conservation Board and one member appointed by the Rio Grande Water Conservation District. This committee is authorized to determine from time to time whether the requirements of the act are being complied with. In the event that the committee finds that there is any violation of the safeguards contained in the act, the Secretary of the Interior must modify the operation to the extent necessary to eliminate any adverse effect.

In addition to the many safeguards contained in the authorizing legislation, the board staff proposes that the Colorado Water Conservation Board appoint an operating committee to monitor and make recommendations concerning the project construction and subsequent operation. As a minimum, this operating committee should consist of representatives from the Rio Grande Water Conservation District, the Conejos Water Conservancy District, the San Luis Valley Water Conservancy District, the Rio Grande Water Users Association, and the San Luis Valley Irrigation Well Owners, Inc.

Conclusions and Recommendations

At the present time, an excess of 600,000 acre-feet of water is being lost in the Closed Basin. Much of this water is being diverted from the Rio Grande. This is a staggering waste of water which should not be tolerated in a state which is constantly struggling to match its available water supplies with an ever increasing demand. The Closed Basin project is an example of reclamation in its truest sense.

As the result of demands on the Rio Grande River under the Mexican Treaty and the Rio Grande Compact, and more specifically as the result of the pending litigation, the state engineer has been forced to curtail water diversions in the San Luis Valley. This has resulted in severe economic hardship to an area which is already economically depressed. The resulting bitterness towards state officials and among neighbors in competition over the same water supply is a condition which can be eliminated by construction of the project. Unless remedial action is undertaken, a series of protracted legal battles will take place over the next many years, none of which will produce an additional drop of water.

The President has requested the sum of \$375,000 for the Closed Basin project for fiscal year 1977. This should be sufficient to complete the definite plan report and a new environmental impact statement. It is recommended that the Governor and the members of Colorado's congressional delegation be requested to support this appropriation.