A strong sense of past accomplishments of a great man and future expectations of a facility that bears his name made July 15, 1982 a day to remember in Gunnison, Colorado. July 15 was the day of the groundbreaking ceremony for the Wayne N. Aspinall-John A. Wilson Center in Gunnison. Present at that ceremony were friends from all corners of the "old fourth district," the State of Colorado and the nation. Among those friends - and honored guest and principal speaker - was the Honorable Gerald R. Ford. Thirty-Eighth President of the United States.

The feeling, the warmth, the respect and the friendship between "Mr. Chairman" and President Ford is still evident in the pictures taken that July day.

Below, left to right: John Wilson, Congressman Wayne N. Aspinall and President Gerald R. Ford.

A Guest Editorial
A Message To Colorado
by Wayne N. Aspinall
Because the feeling, the warmth, the respect evident in the pictures taken on that July day. the initiation of statehood Colorado has contributed much to the success of developing the limited water resources of the semi-arid West. Not the least of these contributions was that made to the legal system of water rights known as the "Colorado doctrine" or the "doctrine of prior appropriation" which was actually originated prior to statehood in the mining camps. This principle of "first in time, first in right" in the use of waters made possible the development of water and other related natural resources of unprecedented magnitude in a semi-arid region. The benefits of that development have been apportioned on a broad scale to thousands of American citizens. If Colorado had followed the traditions of her forefathers in the East and adopted the riparian doctrine of water rights under which the water belongs to the land owners adjacent to the stream and must be kept undiminished in quantity and quality, a preferred class of water barons could have evolved to control the water resources - and not necessarily in the best interests of the people of the State.

The Appropriation Doctrine was developed in an era of flux here in Colorado. When our early pioneers tried to administer water under the Riparian Doctrine, or the Civil Law Doctrine, or a combination of both, it was soon discovered that these methods of water administration used in our sister States and territories would not be workable in Colorado.

We too are living in an era of constantly and rapidly changing economic and social conditions. Our society will never be the same as it was during Colorado's first century as a State. The citizenry is beginning to recognize these changes. Our water leaders are not immune to the influence inherent in a dynamic culture.

Notwithstanding all of its virtues the system of prior appropriation of water rights should not be regarded in a changing world as perfect in all situations, nor as being forever exempt from modification that could result in an improved system of natural resources management. This is especially true if conditions warrant a change and that change is accomplished by agreement of responsible involved parties. It should be remembered that although a water right is a property right in Colorado, that right extends only to the use of water, which, under the constitution, belongs to the State.

The author is not advocating any specific changes in Colorado's water rights system. As inferred above, in the interests of the welfare of Colorado's expanding populations demanding more and more water from a limited supply, he is merely calling the attention of the water leaders of the State to need to assist in or contribute to the protection, conservation and development of water within the state of Colorado...
CWC Board Elections

The following sections on the Board election process are quoted from CWC’s Restated Articles of Incorporation for the information of the CWC membership:

ARTICLE XI, SECTION 1. Each member of the Colorado Water Congress shall be a member of a division as set forth in Article IV, and shall represent the geographic division in which the member resides unless a different division has been designated in accordance with Article III.

ARTICLE XI, SECTION 4. The Division chairman may call an official meeting for nominations for division director(s) or other purposes. Upon the written request of five members of a division, the division chairman may call a meeting of said division within thirty days of receipt of such request. Notice of any division meeting shall be in writing, and mailed to the division members more than seven (7) days in advance of the meeting.

ARTICLE IV, SECTION 2.

A. ELECTIONS: The members of the Board of Directors shall be elected by and from respective divisions. Election shall be by the majority of votes cast on written ballot at the annual meeting.

The written ballot shall consist of the nominee list created pursuant to Article XI, Section 4, and Article V, Section 3 of these Articles, and blank spaces for write-in votes.

B. TERM: Each director shall serve for a one-year term. The term of office of each director shall begin upon installation at the annual meeting at which the election is confirmed and shall end upon installation of the successor director at the next subsequent annual meeting.

ARTICLE V, SECTION 3. A Nominating Committee composed of the five immediate past presidents who are still members in good standing and able and willing to serve. The most recent past president available shall be chairman of the committee. If any division shall not have nominated pursuant to Article XI, Section 4 of these Articles, one or more candidates by December 1 of each year, then the Nominating Committee shall select one or more qualified candidates for each directorship.

ARTICLE III, SECTION 3. Each individual member shall be entitled to vote in and to represent only one division which shall be the geographic division of his or her residence unless that member designates in writing or on an appropriate form a division other than geographic. Each individual member shall be entitled to one vote, which must be cast in person by that member, in any meeting at which a vote of the membership is taken.

ARTICLE III, SECTION 4. Each sustaining membership shall be entitled to vote in and to represent one geographic division in which it has residence, but it may distribute in accordance with the by-laws its votes among other divisions in which it has residence or among other divisions in which it sponsors memberships. Sponsoring members shall not be entitled to a vote on an individual member but shall be entitled to vote for the sustaining member to the extent authorized.

ARTICLE IV, SECTION 1. The Board of Directors shall be composed of 22 members elected by and from divisions as follows:

A. Geographic divisions from which 11 members of the Board of Directors shall be elected to represent agriculture and other interests, one director to be elected by the membership in each of the divisions in the state as follows:

1. Colorado River Watershed (but excluding areas covered by other geographic divisions)
2. White and Yampa Watersheds
3. North Platte and Laramie River Watersheds
4. Gunnison River Watershed
5. San Juan, Dolores, and San Miguel River Watersheds
6. Rio Grande Watershed, including the closed basin of the San Luis Valley
7. Arkansas River Watershed
8. Lower South Platte (downstream of the Weld County Line) and High Plains
9. Upper South Platte Watershed (City and County of Denver excluded)
10. City and County of Denver from which one director shall be elected
11. The Denver Standard Metropolitan Statistical Area (City and County of Denver and Upper South Platte Watershed excluded)

B. A professional division from which two directors shall be elected, one an engineer, the other an attorney

C. A financial division from which one director shall be elected.

D. An industrial and commercial division (but excluding financial, energy and mining firms) from which two directors shall be elected, one of which must reside in the area west of the Continental Divide in Colorado and the other east of the Continental Divide.

E. An energy and mining division from which two directors shall be elected, one of which must reside in the area west of the Continental Divide in Colorado and the other east of the Continental Divide.

F. A municipal division from which two directors shall be elected, one representing municipal water suppliers on the west slope and one representing municipal suppliers on the east slope other than Denver.

G. A governmental division from which one director shall be elected from county or state government.

H. A ground water division from which one director shall be elected.

Copies of the Restated Articles of Incorporation and Restated By-Laws are available from the Colorado Water Congress, 1390 Logan Street, Room 312, Denver, Colorado 80203.

Aspinall Award

The nomination form for the 1983 “Wayne N. Aspinall Water Leader of the Year Award” is available upon request at the offices of the Colorado Water Congress, 1390 Logan Street, Room 312, Denver, Colorado 80203 or phone (303) 837-0812. Nominations, incidentally, must be received by January 1, 1983.

Aspinall 2nd Award Painting

A colored photograph (11 X 14) of the painting (Rudi Reservoir) presented to Glenn Saunders as the second recipient of the "Wayne N. Aspinall Water Leader of the Year Award" at the 24th Annual Convention of the Colorado Water Congress is available for $15. If interested in obtaining a copy of this photograph, please contact the Colorado Water Congress, 1390 Logan Street, Room 312, Denver, Colorado 80203, or phone (303) 837-0812.

Colorado Water Rights

Published by Colorado Water Congress
1390 Logan Street, Room 312
Denver, Colorado 80203
Phones: (303) 837-0812

Member of National Water Resources Association and Water Resources Congress

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Interstate River Compacts: Impact on Colorado

I. Introduction

The first interstate water compacts predated the Constitution itself, originating under the Articles of Confederation. The earliest compacts were interstate agreements dealing with boundary problems, navigation, and fishing rights in interstate waters. Increasing population in the American colonies and competition for agricultural lands, navigation, and fishing privileges led to the negotiation of agreements that permitted these activities to continue under equitable limitations. Recognizing the value of such agreements, the colonists specifically created a "compact clause" in article I, section 10, clause 3, of the Constitution of the United States. The pioneers followed the same pattern.

As large numbers of people moved westward in search of economic and social opportunities, problems moved with them. When the number of people in a given area increased to the point that water resources became inadequate, conflicts arose. These conflicts were often mediated by the demands placed upon them, agreements were negotiated under which the resources could be equitably used by members of society. These agreements between and among sovereign states developed into interstate river compacts.

Today there are 20 major interstate river compacts in the United States that allocate water between and among states. The State of Colorado is a party to nine of them and to three interstate agreements that can be categorized as interstate compacts inasmuch as they are important segments of one of the nine major compacts. A quick review of the geography of the area and history of water development in Colorado illustrates the importance of these compacts to the state.

II. Significant Geography

Geographic and orographic conditions play major roles in the distribution and amounts of precipitation that fall upon Colorado. The location and arrangement of the mountains and valleys through their influence upon air movements determine to a great extent the nature of the various water streams. Precipitation varies annually from 40-50 inches on the high mountain ranges to about 8-10 inches in the more arid regions of the state.

Water has acted as an important catalyst for both agriculture and industry in the economic development of Colorado from the time the first settlers arrived. As in most western states, the distribution of population shows no direct correlation to rainfall. The wetter regions are inhabited by about two-thirds of the Colorado people live within the South Platte River basin that produces less than 10 percent of the state's average annual surface water. The Colorado River Basin contains about 10 percent of the population, but its average annual surface runoff comprises about 70 percent of the total.

"Five major stream systems deliver water to nine other states under compact terms."

Colorado, in relation to its neighboring states is a high-altitude region having in excess of 300,000 square miles ranging over 14,000 feet. Reference is often made to Colorado as the "roof of the nation." Five major stream systems, the Arkansas, Colorado, Platte, and Republican Rivers, and the Rio Grande deliver water to nine other states under compact terms. Thus, despite its arid regions, Colorado is a water producing state from the standpoint that precipitation falls upon it, and much of the runoff flows beyond its borders.

III. A Capsule of Early Colorado Water History

Construction of the earliest recorded continuous water development by white settlers was started as early as 1852 on the People's Ditch, a diversion from the Rio Grande in the San Luis Valley in southeastern Colorado. This ditch has been used since its completion and has the earliest decreed priority (1852) in Colorado. About the same time other water developments were initiated, the largest of which was on the Purgatory River near Trinidad.

In the 1860s and 1870s many new immigrants constructed more extensive irrigation facilities in the valleys of the Rio Grande, Purgatory and South Platte Rivers. Irrigation development was very rapid, especially in the warmer climate of southern Colorado where by 1864 in the Purgatory River basin the summer base flows were completely appropriated.

Later in the 19th century and in the early years of the 20th century larger irrigation systems were constructed in the Rio Grande Valley and in the South Platte, Arkansas, and Colorado River basins. Where it has been physically and economically possible, new irrigation enterprises have been expanded. Irrigation systems in these basins still constitute the foundation for a substantial portion of the economy of the state.

It should not be overlooked that some of the earliest water uses were not for mining. A good example was the diversion of port of water from the West Slope to eastern Colorado commenced in 1880 when the small Ewing Ditch for placer mining was constructed from the headwaters of the Eagle River to the Arkansas River watershed. Today 25 transmountain diversions transport approximately one-half million acre-feet of Colorado River system water per year to eastern Colorado for domestic, municipal, agricultural, electric energy generation, and industrial purposes.

Since 1900 settlement of the West has been very rapid. Passage by the Congress of the Reclamation Act in 1902, together with the increasing demands on water resources for agricultural and industrial expansion, accelerated the development of water resources and hydroelectric energy generation.

IV. Need for Interstate River Agreements

Colorado and her sister states became deeply involved in the western migrations of people. Conditions were right for settlement, for acquisition of mineral and agricultural lands, and for the development of the related water resources with the blessing and encouragement of the federal government. Water supplies of western streams at first appeared to be limitless. By the beginning of the 20th century it was realized that the water supplies of these same streams were far from ample in proportion to the other natural resources — such as land, minerals, oil, and gas — that required water for their exploitation and processing.

With the State of Colorado as a nucleus at the headwaters of important water sources, formal legal processes evolved from pressures of increasing populations claiming the use of more and more waters from streams that flowed by gravity to other states.

Aside from the unique position of Colorado at the "roof of the nation," Colorado also found herself in a vulnerable political situation with respect to other states using water from the same river streams. Colorado, therefore, was in a situation in which the fact that water users in these other states were staking claims to the consumptive use of large quantities of water from Colorado should be of great concern. Colorado was well aware that the claims might deepen questions about the future of Colorado as a producer of water and was well aware that the claims might develop into permanent legal rights under the doctrine of prior appropriation. There was some irony in the situation, too, because this doctrine, also known as the "Colorado doctrine," had been perfected by Colorad in earlier days to establish valid water rights for mining enterprises.

It was inevitable that the requirements for more and more water would collide with the limited supply. This collision led to disagreements among users of waters of interstate streams and, consequently, to actual or potential disputes between and among states. The result had to be either interstate litigation, an adversary approach, or use of the interstate compact, a cooperative, constitutionally approved approach through mutual understandings of the disputants. Colorado has been a leader with respect to both approaches in the field of water resources.

V. State of Colorado — Interstate River Compacts

Compacts were not generally used for the apportionment of water between and among states until 1922. With Colorado as one of the most arid states and in the face of the water crisis of 1922 was negotiated by commissioners representing the seven states of the Colorado River Basin — Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming — and a federal representative, Mr. Herbert Hoover. Among the various factors that precipitated action on the part of Colorado continued on page 5.
The Windy Gap Project

The Windy Gap Water Project is now under construction just below the confluence of the Colorado and Fraser Rivers, 1½ miles west of Granby, Colorado.

The project will store a portion of the upper river flow in a scenic 106 acre reservoir and pump waters nearly six miles via an underground pipeline to Lake Granby for carriage to the eastern slope through the Colorado-Big Thompson system.

The Windy Gap Project is being financed and constructed under the auspices of the Municipal Subdistrict of the Northern Colorado Water Conservancy District, headquartered across the Continental Divide in Loveland.

Participants in the project and the Subdistrict members include the front range cities of Boulder, Greeley, Longmont, Loveland, the mountain town of Estes Park and the Platte River Power Authority (P.R.P.A.). Fort Collins participates in P.R.P.A. and the Municipal Subdistrict but is not directly served by the Windy Gap Project.

Planning for this project began in 1964 with water rights applications being filed in 1967. Groundbreaking in July 1981 followed many years of legal, environmental and engineering study.

A sophisticated compromise agreement between the subdistrict and western slope water users including the Colorado River Water Conservation District, Grand County and the Northwest Colorado Council of Governments was reached while planning Windy Gap. This agreement provided valuable trade-offs for the western slope to protect their future water rights while including cooperation in the construction of the Aurora Project on the Colorado River.

Project completion is slated for 1984 and water deliveries of approximately 48,000 acre-feet annually will provide a new source of dependable, high quality water for the many uses of thousands of Coloradans.

About the Northern Colorado Water Conservancy District

One cannot discuss the Windy Gap Project without understanding the relationship between the Municipal Subdistrict and the parent Northern Colorado Water Conservancy District (NCWCD).

The Windy Gap Project is being financed and constructed under the auspices of the Municipal Subdistrict, headquartered across the Continental Divide in Loveland.

The Subdistrict is a legal entity with all the powers of a public corporation. It was created by a Decree of the District Court under the powers of the Conservancy Act. By law, the Subdistrict is governed by the same Board of Directors as the parent District. However, the Board has chosen different officers to guide the organization. Under directions from the Subdistrict Board, staff members and counsel have performed studies, proceeded in Water Court, and negotiated with the federal government for use of CBT facilities in the carriage of Subdistrict water.

The Subdistrict is a legal entity with all the powers of a public corporation.

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The Colorado River Compact is regarded as the grandfather of water allocation compacts in the United States. Some of its more important provisions are the following:

1. The Colorado River Basin was divided into two subbasins — the upper basin and the lower basin — which was defined as a point one mile below the mouth of the Paria River which is located a few miles south of the Utah-Arizona boundary. The waters of the entire Colorado River basin system, including the Paria River and return flows from the upper basin projects, converge into one stream.

2. The annual beneficial consumptive use of 7,500,000 acre-feet of water was apportioned to each subbasin, the upper basin and the lower basin — with the lower basin granted the right to consumptively use another million acre-feet annually if it is available.

The Colorado River Compact, of course, was preceded by a number of other compacts. Some of these are discussed below, including the Colorado Water Rights.

Colorado Water Rights is the voice of Colorado water users and those interested in Colorado water matters. You are invited to write articles or columns contributing to the protection, conservation, and development of water within the state of Colorado. In order to achieve that dedicatory goal, you and I must give ourselves to receive — please help.

ColoWater Rights will be published on a quarterly basis. CWHR also replaces the quarterly Colorado Water Congress Newsletter. In each issue of CWHR, it is our intention to provide the reader with a thought provoking guest editorial, one major article of substance, congressional viewpoints, reports by state officials, a comprehensive calendar of water events, letters to the editor, personnel developments, a project profile, and other items of interest (any suggestions?).

It should also be noted that the Colorado Water Congress has a new logo. The new logo is symbolic of Colorado, its snowcap mountains, its major watersheds and its western heritage. Any comments or suggestions you may wish to offer for Colorado Water Rights and the new CWHR logo will be most appreciated.
The nonagricultural uses of treated water on the Front Range currently require delivery to a total of about 540,000 acre-feet per year. If water demand continues at that rate, and population increases as expected by 1.25 million, approximately 820,000 acre-feet will be required annually by the year 2000.

The area's current population is growing at a rate of 2.75 percent — nearly three times the national rate.

Urban growth lies behind the increasing demand for water. Front Range population, now 2.3 million, accounts for 80 percent of the state's population.

The Directors of NCWCD recognized that the CBT had been developed primarily for agricultural production with a relatively small supply for the cities. They understood that with growth, the municipalities would begin purchasing large quantities of project water from farmers, thereby diluting the benefits of the original recipients.

William D. Farr, a well-known cattleman and former director of the Colorado Beef Cattle and Drought Development Council, commented that water laws “have been excellent to manage the water situation as it has been.” But he realized irrigated agriculture would eventually be threatened by the demand for high-quality water by the cities.

Intent on reserving CBT supplies for the preservation of irrigated agriculture, citizens of water users like Farr urged the creation of an entity capable of developing additional municipal supplies. Thus, in July of 1970, the cities of Boulder, Longmont, Loveland, Fort Collins, Greeley, and Estes Park petitioned for the creation of the Municipal Subdistrict.

Their purpose for so doing was to develop a new and independent project on the Colorado River which could also use the existing excess capacity of the CBT.

The project chosen for development was WINDY GAP.

Is WIndy Gap The Best Choice?

Yes! During the course of study to determine the feasibility of the project, several alternatives were factored into research models in order to find the most suitable and economical of the alternatives.

Among the alternative studies: An increased number of ground-water re- scription of agricultural water rights, and alternative project features. All of the alternatives proved to be less viable than the one chosen.

Windy Gap Project Benefits...

Environmental Soundness.

Many months of exhaustive research into such topics as climate, hydrology, water quality, aquatic biota, aesthetics, land use, and socio-economic effects have been given to this project.

Detailed engineering has insured that project components will hold disruption of the natural environment to an absolute minimum. For example, areas disturbed during pipeline placement (the pipe will be buried) will be reclaimed and planted to assure restorat ion of the natural area.

A sophisticated mitigation agreement to protect endangered species was entered into between the Subdistrict and Fish and Wildlife Service. The Subdistrict has agreed to provide a biological investigation and monitoring program of Colorado River fishes and assist in the construction and habitat manipulation work for endangered species.

Water Reuse...

Under Colorado Water Law, the un consumed portion of water which is developed and imported to a stream system by the efforts of man may be reused.

Windy Gap deliveries will be "imported" waters. Therefore, the Subdistrict members may claim this reuse capability for irrigation, augmentation, thermal cooling, etc.

Power Generation...

After Windy Gap water flows through the Alva B. Adams Tunnel, it will contribute to power generation as it drops several thousand feet to East Slope storage reservoirs.

A Healthy Economy...

The rapidly rising population of the Subdistrict is, of course, a function of the thriving industrial and business base of its member communities. Corporations nationwide have been quick to recognize demographic trends and relocate or expand into this area.

Water is the single limiting factor to growth and development in the area. These additional supplies are crucial to the planned development and improvement of our quality of life.

The Windy Gap Project

Physical Components...

1. A DIVERSION DAM located on the Colorado River just downstream of its confluence with the Fraser River. The dam will be constructed of earthfill, will have a height of 27 feet and a length of 5,380 feet. The dam will impound approximately 320 acre-feet of live storage and the reservoir will cover about 106 surface acres.

2. A PLANNING PIPELINE to lift the water through the connecting pipeline. The four pumps will be located at the north abutment of the dam and will lift 15 feet below the present riverbed. The plant will be capable of discharging 600 cubic-feet per second (cfs) (388 MGD) of water into the pipeline against a dynamic head of 526 feet.

3. A PIPELINE to convey waters to Lake Granby for storage and release for eastern slope use. The pipeline will be constructed of stressed concrete. The buried pipe will have a diameter of 9 feet and will be 31,000 feet long. This conduit will have the capacity to carry the entire 600 cfs capacity of the pumps.

4. AN INLET STRUCTURE at Lake Granby to release the water into storage. The length of this unit is 425 feet with only 65 feet visible when the lake is full. It has the capacity to handle 300 cfs inflow from Windy Gap while simultaneously carrying 440 cfs input from the CBT Willow Creek pumping system.

The true economy of the plan now becomes apparent. Waters will be stored in Lake Granby, then transported via existing CBT facilities. No additional construction is necessary. In this existing system, water is then carried via the Adams Tunnel to the eastern slope. Project water will then be supplied through distribution systems already operated by the NCWCD.

Project Financing

Windy Gap is being financed through the sale of Water Revenue Bonds. These Municipal Bonds were offered for sale on the open market and were purchased by individuals seeking a sound investment in the often unpredictable financial arena.

In June of 1981, $84 million in these bonds were sold at a net interest cost of 11.238%. Proceeds from the sale were invested in high interest and low risk certificates, which mature as construction funds are needed.

Combined construction and water acquisition costs are expected to total $47 million. Interest, underwriting and reserve costs account for the remainder.

The success of the bond sale is indicative of the overall sound planning surrounding the project.

Construction Schedule

The construction schedule towards completion of the project is as follows:

- Relocation of a section of Highway 40 during 1981 and completion of the dam and spillway in the fall of 1983. The pumping plant will near completion in the winter of 1983 while the pumps will be installed early in ’84. Pipeline excavation will depend on weather conditions but will begin during the spring of 1982, resume at warm weather in the following spring and reach completion before snowfall in the fall of 1983.

- Commissioning of the entire project is expected in 1984.

New CWC

Sustaining Members

(since January 1, 1982)

Hecla-Packard Loveland Instrument Division, Loveland
Robert F. Krasna, P.C., Pueblo
Trout Unlimited, Colorado Council, Denver
Rocky Mountain Group, Montrose
Water Development, Inc., Colorado Springs
IntraWest Bank of Denver, Denver
Richard Martin, Carbondale
Animas-La Plata Water Conservancy District, Durango
Rio Blanco Natural Gas Company, Denver
Robert M. Campbell, Cedaredge
Town of Vail, Vail
Bureau of Reclamation, Upper Colorado Region, Salt Lake City, UT
Schmueser & Associates, Glenwood Springs
Delaney & Balcomb, Glenwood Springs
Colorado Hydro Power Corporation, Crestone
Garfield County Commissioner, Glenwood Springs
U.S. Army Corps of Engineers, Albuquerque, NM
Mobile Premix Concrete Company, Denver
Colorado Water Resources & Power Development Authority, Denver
Hays & Wilson, Denver
Pikes Peak Water Company, Colorado Springs
Town of Silverthorne, Silverthorne
Chesaco Shale Oil Company, Denver
R. W. Wamsley, Rifle
Rocky Mountain Cons-Ter Services Group, Denver
Smith Barney, Harris Upham & Company, Inc., New York, NY
Harrison Land & Cattle Company, Fort Collins
William C. Beanland, Chey Chasse, Maryland
Vail Valley Consolidated Water District, Avon
Ray D. Walker, Glenwood Springs

New CWC

Individual Members

(see January 1, 1982)

James M. Sullivan, Arvada
William R. Smith, Littleton
Jeffrey Herr, Denver
William E. Korbiz, Arvada
Neil Grigg, Fort Collins
George McCoy, Boulder
Michelle Balcomb, Glenwood Springs
Mayor Ed Touher, Salida
California's relations with the United States are important, and the critical role played by Arizona and California, sometimes aided and abetted by the superior political power of Arizona and California. That fact is now recognized by the congressional arrangements for new projects or the appropriation of funds by the congress appears on the horizon.

Colorado now has to stand on her own legs. She can do it. First and foremost, we must develop a position with respect to a water conservation and development program for the State. For success in meeting assaults on our compacts and the protection of the use of Colorado water therefrom, the state has a fundamental prerequisite that must be met. That prerequisite is the establishment of the State's position fully at the Congressional level. Only through this type of action will others become cognizant that Colorado sincerely places the high value on water that is expressed in her rhetoric.

Wayne N. Aspinall of Palisade has dedicated his life to public service. Mr. Aspinall's public service includes: 24 years as a member of the State Senate (served two years as Speaker of the Colorado Senate), 12 years as Chairman of the Interim Service Committee; 10 years in the Colorado State Senate (served two years as majority leader and five years as minority leader). He was appointed by the President to be a member of the Colorado River Commission and served there for 12 years. The President appointed a federal representative who has the same vote as each state's commissioner and who serves as chairman of the conference and regulating body. Under the provisions of the Compact all affected states may order curtailment of water uses within a state or states where deemed necessary to meet delivery requirements by the upper division states to the lower basin under the terms of the Colorado River Compact. Three agreements or subagreements between Colorado and other signatory states pertaining to the use of water of interstate tributaries are included within the Colorado River Compact.

The Compact was designed to apportion the waters of the Republican River and its tributaries. This Compact has a water quality element in it. If water is deleterious to the use of the Compact, the states cannot be forced to use the water, but they must ensure that the water is not deleterious. The Compact provides that during the winter storage season (November 1 - March 31) Colorado may demand releases of water from the reservoir equivalent to the river flow but not exceed 100 cubic feet per second.

Table 1 illustrates the effects on the state in quantities of water committed for the 14,000 acre-feet per year acre-feet of water of water per year of which Colorado uses 3.99 million. Compact commitments to the other states amount to 1.01 million acre-feet per year of which 860,000 acre-feet per year are being used. The remaining 350,000 acre-feet are still available at the state boundary. The compacts pertaining to these drainage areas, insofar as protection of Colorado's right to use water therewith, have been a distinct advantage to the State of Colorado which is using 85 percent of the water originating in the State.

In the Colorado River Basin over 70 percent of the virgin flow of the river, as measured at Lee Ferry, originates within the State of Colorado. According to Table 1 about 72 percent of this supply is allocated to compacts by be used to be compacted in other states.

Colorado Water Rights 7

VI. Effects of Interstate River Compacts on the State A. Impacts on Water Supply

In analyzing the effects of interstate river compacts upon the State of Colorado, the first question that presents itself is: "How has the ultimate water supply of the state been affected?" Table 1 illustrates the effects on the state in quantities of water committed for the 14,000 acre-feet per year of which Colorado uses 3.99 million. Compact commitments to the other states amount to 1.01 million acre-feet per year of which 860,000 acre-feet per year are being used. The remaining 350,000 acre-feet are still available at the state boundary. The compacts pertaining to these drainage areas, insofar as protection of Colorado's right to use water therewith, have been a distinct advantage to the State of Colorado which is using 85 percent of the water originating in the State.

In the Colorado River Basin over 70 percent of the virgin flow of the river, as measured at Lee Ferry, originates within the State of Colorado. According to Table 1 about 72 percent of this supply is allocated to compacts by be used to be compacted in other states.

B. Administrative Impacts

Administration of compacts by Colorado officials to implement the expressed purposes of the compacts, including the delivery of waters allocated, have at times presented problems of varying complexity to the state. These problems are particularly unique to a given river basin and compact. Therefore, a brief mention of a few problems facing the state will be made.

1. La Plata River Compact

On some occasions the flow of the La Plata River is so low that the 50-50 compact split of the water between Colorado and New Mexico neither state can receive a usable supply. In order to alleviate this situation the state agreed to a number of actions which would increase the flow of water delivered to the states of the Compacts. These innovations have been successful in maintaining an adequate rotational system has developed. The ultimate impact of this problem on the state is unknown, and a solution is yet to be attainted.

2. South Platte River Compact

Presently Colorado is planning to construct the Narrows Reservoir near Fort Morgan. Although Nebraska has not yet formally complained about this potential reservoir, officials of that state are reported to be investigating the possible effects upon Nebraska water users. Under present conditions of irrigation, large numbers of customers in the river basin are used.

Table 2 shows that Colorado is using an average of about 5.6 million acre-feet per year of a total of 15.6 million acre-feet of water produced. Colorado will be able to increase its use to about 1 million acre-feet to a total of about 6.6 million acre-feet per year for the state as a whole, or about 42 percent of the produced water supply. Colorado is furnishing nearly 8.8 million acre-feet of water to sources outside the state to meet compact commitments.

Table 1 also shows that the drainage basins in Colorado, excluding the Colorado River Basin, produce a total of 4.8 billion acre-feet of water per year of which Colorado uses 3.99 million. Compact commitments to the other states amount to 1.01 million acre-feet per year of which 860,000 acre-feet per year are being used. The remaining 350,000 acre-feet are still available at the state boundary. The compacts pertaining to these drainage areas, insofar as protection of Colorado's right to use water therewith, have been a distinct advantage to the State of Colorado which is using 85 percent of the water originating in the State.

In the Colorado River Basin over 70 percent of the virgin flow of the river, as measured at Lee Ferry, originates within the State of Colorado. According to Table 1 about 72 percent of this supply is allocated to compacts by be used to be compacted in other states.
Interstate River Compacts
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3. Rio Grande Compact
The Rio Grande Compact is a bone of contention among Colorado, New Mexico, and Texas for about 20 years, principally because Colorado failed on many occasions to deliver sufficient quantities of water at the New Mexico state line. The deficits in deliveries finally became of sufficient magnitude that Texas entered a lawsuit in the U.S. Supreme Court against Colorado in an endeavor to force Colorado to meet its obligations under the Rio Grande Compact. The Supreme Court in 1967 granted leave to Texas to file a complaint. New Mexico intervened in the case on the side of Texas. In 1968 the Court issued a continuance order. As long as Colorado meets its annual Compact water delivery commitment at the state line each year, the case will remain in abeyance. Meanwhile, an administrative solution is being developed.

Colorado has had to enforce the curtailment of the use of water by irrigators in the San Luis Valley in recent years in order to meet the Compact commitment. The state has also sponsored the construction of the Closed Basin Project in the San Luis Valley as a federal aid in the project to make possible the continuation of irrigation in Colorado and at the same time deliver the required amounts of water to New Mexico and Texas.

The restrictions of the Rio Grande Compact have caused serious impacts on the development and economy of the local area and the state.

4. Republican River Compact
Colorado law treats underground water in the same manner as surface water, i.e., as being a part of the total supply of a river basin. If the pumping of water from this basin in Colorado increases to such an extent that deliveries of water to Kansas are affected, Kansas will undoubtedly object.

5. Arkansas River Compact
Prior to the Arkansas River Compact of 1948 the use of the waters of the Arkansas River was a subject of litigation between Colorado and Kansas in at least three different legal proceedings. There have been continuing problems with the administration of the interstate Compact. Although Kansas was given the right to 40 percent of the water stored in John Martin Reservoir, there are times when Kansas' share of the water does not arrive at the state line. There is also a problem related to a large number of irrigation wells in Colorado that are depleting the groundwater and thus contributing to the overall problem of compact administration.

6. Costilla Creek Compact
Problems with administration of this compact have been minor.

7. Animas — La Plata Project Compact
This compact, which was authorized by the Congress in 1968, has not been constructed. Therefore, this Compact has not been put into effect.

8. Colorado River Compact
The Colorado River Compact does not provide for a permanent administrative agency. There are two articles in the document that indicate that a certain amount of administration was anticipated. For instance, the Compact specifies that the chief official of each state charged with the administration of water rights, together with the Director of the U.S. Reclamation Service and the Director of the U.S. Geological Survey shall cooperate, ex officio, to determine and coordinate facts relating to water supply and consumption, publish a record of annual flows of the Colorado River at Lee Ferry, and perform such other duties as may be assigned by mutual consent of the seven basin states.

The Compact also provides that if any claim or controversy arises between any of the signatory states, the governors of the states affected, upon the request of one of them, shall appoint commissioners with power to consider and adjust such claim or controversy, subject to ratification by the legislatures of the affected states. This provision of the Compact has never been invoked. The 1964 decision of the U.S. Supreme Court in the fourth Arizona v. California lawsuit requires the Secretary of the Interior to act as water master or administrator for operation of the lower main stem of the Colorado River for deliveries of water to Arizona, California, and Nevada.

9. Upper Colorado River Basin Compact
Unlike any of the other river agreements to which the State of Colorado is a party, this Compact created an interstate agency known as the Upper Colorado River Commission to administer the Upper Colorado River Basin Compact. The Commission is composed of one commissioner appointed by each state and one commissioner appointed by the President to represent the United States of America. The Commission is charged with certain well-defined powers and duties, among them that of making findings as to the necessity for and the extent of curtailment of use of water by each of its member states in the event such curtailment becomes necessary, in order to maintain the river flow to the lower basin in compliance with Article III of the Colorado River Compact. Due to the fact that none of the member states have used their full apportionments of water it has not been necessary to invoke this power of the Commission.

VII. Conclusions
The State of Colorado has heavily influenced the history and development of the compact concept; compacts are a mutually agreeable means of settling existing water disputes and preventing future controversies over the waters of interstate streams. Colorado, a party to the first interstate water allocation compact in the United States and to a total of nine similar agreements, together with her sister states, has had a great impact on the process of interstate water allocation. Consequently, water compacts in which a party has had and will continue to have their influences on the nature and direction of actions of state officials in the future development, conservation, and utilization of the water resources of Colorado. Compact terms have served as parameters for resource development processes.

Officials of the state have done an effective job in preserving the rights of Colorado citizens to use waters of interstate streams. It can be said with respect to river systems with headwaters in Colorado that, without compacts, other states probably would have obtained the permanent rights to use the bulk of interstate waters by prior appropriation due to their more rapid settlement and development. The benefits of this compact protection greatly outweigh the adverse effects of administrative problems that have been created, or the trials and tribulations that will be associated with seeking judicial corrections of inequities through Supreme Court interpretations of the Colorado River Compact. This is not to say that such judicial determinations should not be sought, because they certainly should be where inequities are believed to exist and the remedy will be beneficial to the state.

Changes in the overall economy have made possible the great expansion of groundwater pumping in several of Colorado's river basins in recent years. The interweaving of Colorado laws related to groundwater and surface water may lead to future disputes with neighboring states, if extraction of water from wells materially affects the streamflow across the state lines. In that event, litigation under the compacts can be expected, and the legal position of Colorado will be tested under compact interpretation.

Although compacts have attained a great stature in the allocation of the use of water resources of interstate streams in the West, they should not be regarded as the only, or permanent, solution to all water problems. Many years ago the writer attended a water conference in Colorado at which the so-called "old" Slope-West Slope controversy over the transmountain diversion of Western Slope Colorado River water to the Eastern Slope was being aired in no uncertain terms. One of the participants facetiously suggested that a permanent settlement of the fight could be attained by dividing Colorado at the Continental Divide, giving the western portion to Utah and the eastern portion to Kansas, and negotiate an interstate streams compact between Utah and Kansas.

In Colorado as well as in other parts of the West, exploitation is gradually being superseded by a sense of conservation. As the ultimate limit of the use of available water resources is approaching it is hoped that interstate water compacts may prove to be effective devices in aiding members of society to live together and make the most of what remains. As the goals and desires of Colorado society change, time may prove that too much rigidity in one or more of the interstate compacts could impair or preclude arriving at the best possible combination of social and economic benefits. Such changes ordinarily do not happen in one state alone. They usually occur on a regional basis. An atmosphere may be created in which trade-offs can be possible. At that point it is hoped that reasonable men will be able to sit around the table and reach interstate agreements that will be as successful as those of the past.

Interstate river compacts notwithstanding, one conclusion seems certain. To paraphrase a noted water authority of the State of Colorado, the final chapter in the continuing struggle over the waters of Colorado's rivers has not yet been written and may never be.