WATER LEASING FOR INSTREAM FLOW[1]

Liter E. Spence[2]
Montana Fish, Wildlife and Parks

"Rivers are marvelous spirits. Perpetually singing and dancing, they amble merrily toward the ocean, where they rejoin their cradle and their grave, lose their identities, and are mystically transported to the tops of the mountains to begin new lives."

--Constance Elizabeth Hunt, "Down by the River"

"Rivers have what man most respects and longs for in his own life and thought -- a capacity for renewal and replenishment, continual energy, creativity, cleansing."

--John M. Kauffmann, former American Rivers board member

"Ask the typical man on a horse to tell you about water leasing in Montana, and you're likely to a get a blank stare if not worse. Although the state's lease program is nearly four years old, not much is known about it, thus, like most unknowns, it carries the burden of suspicion."

--Montana Stockgrower, October 1993.
Article on Water Leasing by Joyce Lancey, editor

"Although this idea is simple enough, the design and implementation of Montana's water leasing program is fraught with problems."

--McKinney, M. J. 1991. Leasing water for instream flows: The Montana experience. In: Rivers, Vol. 2 (3), July, 1991. p. 247.

HISTORICAL PERSPECTIVE

During the early settlement of the west, the development attitudes and economics of the day did not contemplate the recreational use of water in streams. Consequently, the water resource was used for economic development and no consideration was given to the need for instream flows to maintain fish and wildlife resources. Instead, emphasis was placed on the removal of water for mining, agricultural and other purposes. During more than 130 years of water development in Montana, streamflows have been reduced in nearly every river basin. This "dewatering" has had adverse impacts on the fish populations and recreational use of these streams.

Because "first in time is first in right" in Montana, as it is in most of the west, the removal of water has priority over keeping it in streams. In recent times, however, recreation, particularly fishing, has become of increasing economic importance. There is more emphasis on finding

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[2]Water Resources Supervisor, Montana Fish, Wildlife and Parks, P.O. Box 200701, Helena MT 59620-0701.

ways to maintain and improve streamflows to provide fish populations that will satisfy the angling public. Because many important fishing streams are already overappropriated, streamflows can only be improved by putting some of the already appropriated water back into the stream.

This is the concept of water leasing.

Why is water leasing important? The answer requires a brief discussion of the habitat needs of fish. Generally, we think of stream fish habitat in terms of three components: (1) The physical channel itself, (2) the quantity of water required to fill the physical channel, and (3) the quality of that water. Instream flows represent the water quantity component of stream habitat. One means to provide that component is to lease existing diversionary water rights and put that water back into streams. This makes previously unavailable water available to improve the habitat for fish.

However, Montana water law prevented this concept from being tried until 1989.

NOTE: Leasing is not the only means to acquire instream flows in Montana. Other programs by which MFWP has acquired instream flows include the water reservation process established by the 1973 Montana Water Use Act and "Murphy Rights" authorized in legislation passed by the 1969 legislature. However, both these processes only allow the acquisition of unappropriated water. A priority date is established which protects the status quo of streamflows from future appropriation by junior water users, but does nothing to put water back into streams that suffer from low flows.

LEASING LEGISLATION

The most controversial natural resource issue that came before the 1989 Montana Legislature was HB 707, the water leasing bill. The issue arose primarily as a result of the 1988 drought's impact on stream fisheries. The bill was strongly supported by the environmental community. The introduced bill was strongly opposed by the agricultural community and was, at one point, rejected by the Legislature. However, it was revived and, through amendments, approved in the closing days of the session. It was signed into law in May, 1989.

A sample of newspaper headlines before and during the 1989 legislative session provides a feeling of the debate that took place prior to the bill's approval:

"Water Fight: Irrigators, environmentalists see battle in '89 legislature". Great Falls Tribune, Sept. 12, 1988.

(Then Governor) "Stephens supports water leasing bill". Ravalli Republic (Hamilton), Feb. 15, 1989.

"Debate boils over proposed water bill: Ranchers and recreationists disagree about the bill's intent and power". Ravalli Republican, Feb. 20, 1989.

"Water rights leasing plan endorsed" (by the House). Independent Record (Helena), Feb. 22, 1989.

Water leasing bills concerns stockgrowers" (sic). Montana Stockgrower, March, 1989.

"A good bill goes down". Independent Record, Mar. 4 1989.

"Both sides threaten water-lease suits". Independent Record, Mar. 16, 1989.

"Water lease amendments advance". Independent Record, Mar. 21, 1989.

"Senate kills water leasing". Independent Record, Mar. 23, 1989.

"Water lease defeat makes a lawsuit, (constitutional) amendment likely". Independent Record, March 23, 1989.

(Representative) "Marks condemns ag lobbyists' tactics". Independent Record, April 4, 1989.

"Water leasing back on burner". Independent Record, April 10, 1989.

"No dredging up water-lease bill". Independent Record, April 11, 1989.

"Water lease bill may be revived". Independent Record, April 12, 1989.

"Water lease bill revived". Independent Record, April 14, 1989.

"Senate OKs watered-down water lease". Independent Record, April 15, 1989.

"Water lease compromise sent to governor". Independent Record, April 21, 1989.

The purpose of the leasing law is to study the feasibility of leasing existing water rights to enhance streamflows for fisheries. The original bill created a four-year pilot program that allowed only Montana Fish, Wildlife and Parks (MFWP) to lease water rights from willing individuals. MFWP, with the consent of the Fish, Wildlife and Parks Commission, provided the Board of Natural Resources and Conservation (Board) with a list of specific stream reaches on which leasing is desired. The Board could designate up to five stream reaches where water could be leased for instream flows to enhance the fisheries. Amendments to the original bill in both the 1991 and 1993 legislative sessions extended the four-year study to a 10-year study (ending June 30, 1999) and gradually increased the number of eligible stream reaches from 5 to 20. Due to reorganization of some state government agencies in 1995, the Board was eliminated and most of its duties were taken over by the Department of Natural Resources and Conservation (DNRC).

Before a lease agreement is made, MFWP must assess the impacts of potential leases on other water right holders on the stream and then seek approval for a lease from DNRC through the existing water right change process. An Environmental Assessment is written for each lease and distributed for public review and comment.

MFWP can only lease water from a willing party. If MFWP and the water rights holder cannot

agree to the terms of a lease, the lease will not occur. Leases cannot result in the confiscation of water rights and a lease may not be approved until any objections to the lease are resolved through the change process.

The maximum amount of water that may be leased is the amount historically diverted by the lessor at his point of diversion. However, only the amount historically consumed, or a lesser amount as determined by DNRC, may be protected below the point of diversion.

A lease may be issued for a maximum period of 10 years but may be renewed one time for an additional 10 years. However, leases that are the result of a water conservation or storage project, such as converting from flood to sprinkler irrigation, can be issued the first time for not more than 20 years. There is no provision for renewing a 20-year lease. All leases entered into prior to June 30, 1999 remain valid until the expiration of the lease.

HB 707 is codified in Sec. 85-2-436 to 85-2-438, MCA and is titled "Water Leasing Study".

EARLY IMPLEMENTATION PROBLEMS

The leasing study got off to a slower start than anticipated for at least two reasons. First, MFWP elected to proceed at a cautious, yet deliberate, pace given the concern and controversy surrounding passage of HB 707. Second, MFWP proceeded to conduct several studies on the impact of water leasing prior to submitting a change of use application to DNRC. One of the studies was to determine the market value of leasing existing water rights for instream flows. Two others involved hydrologic analyses of the first two streams where leasing was being investigated to determine the possible effects of the leases on existing water users. There was disagreement between MFWP and some supporters of the leasing bill as to whether the market value study was necessary. They believed that MFWP should simply go out and start negotiating water leases. Because a market for transfer of existing rights to instream flow has not been established in Montana, the market value study provided a basis for negotiating the price of leasing water. However, the amount paid for a lease is negotiable and the outcome depends, to a large extent, on how the negotiating parties perceive the value of the rights to be leased.

The initial slow pace of the program can also be attributed, in part, to the post-legislative carryover of concern by some agricultural folks that leasing would interfere with their water rights and would go against the traditional concept of water use, opening the door for other changes that would be unacceptable. Some potential lessors were unwilling to be the first persons to lease water because of perceived repercussions from others in the agricultural community. One individual who was willing to negotiate indicated he was getting pressure from his neighbors about leasing to MFWP. However, he continued negotiations (which eventually fell through because of the asking price).

As time passed, the concern of these folks diminished as they found that MFWP was not

acquiring leases very fast and that interference with their water rights and existing water use was not occurring. Also, some agricultural interests felt that they could do whatever they wanted to with their water rights because they are considered a property right. Gradually, the leasing program became more accepted as a means to help dewatered streams through agreements between willing lessors and MFWP, i.e., no one was being forced to lease water. In fact, leasing came to be seen as the least threat to their water use because MFWP was the only entity that could lease water. They felt this was better than some public trust proposals being talked about that could have greater impacts on their lives.

LATER IMPLEMENTATION SUCCESSES

MFWP has completed seven leases to date.

The first lease was completed in August, 1992 on Mill Creek, a tributary to the Yellowstone River near Yellowstone National Park. The lease was a rather complicated agreement with the Mill Creek Water and Sewer District that involved 48 individuals and 95 different water rights. It is a result of a water conservation project in which three inefficient ditch systems used for flood irrigation were converted to a gravity pipeline and sprinkler system to irrigate the same lands more efficiently. This lease provides a once per year, 48-60 hour flow of up to 65 cfs.

The second lease was also completed on Mill Creek in October, 1992. The lease is with a single individual and is also a result of the water conservation project. MFWP leases the salvaged water for instream flows.

Both of the Mill Creek leases are to improve spawning conditions for cutthroat trout that migrate from the Yellowstone River into the stream to spawn. The 48-60 hour flow is to occur in August to flush young cutthroat trout from Mill Creek to the Yellowstone River. The salvaged water lease is to help maintain a base flow in the creek.

The third lease, completed in August, 1993, was with a single individual on Blanchard Creek, a small tributary in the Blackfoot River basin in western Montana. MFWP leases irrigation water by paying the rancher to pasture his cattle elsewhere when streamflows drop to an agreed to level. Rainbow trout spawning and young fish production have already improved as a result of this lease.

The fourth lease was completed in October, 1994 with six individuals holding water rights on the same irrigation ditch from Tin Cup Creek, a spawning tributary to the Bitterroot River in western Montana. It is a straightforward lease in which MFWP pays for leaving all of the six water rights in the creek below the diversion point. The lease is expected to improve flows for rainbow trout that migrate from the Bitterroot River to spawn in the creek.

The fifth lease is with the U.S. Forest Service which purchased a private ranch near the north entrance to Yellowstone National Park for elk habitat. They will continue to irrigate some lands

but have leased some of their unused rights to MFWP for instream flow to improve Yellowstone cutthroat trout spawning in Cedar Creek, another important tributary to the Yellowstone River. This agreement was completed in December, 1993.

The sixth lease, completed in August, 1995, is the result of converting a flood irrigation system to a gravity pipeline sprinkler system. It involves three individuals who irrigate from Hells Canyon Creek, a Jefferson River tributary. The new system was completed in the fall of 1995 and the lease will become effective during the 1996 irrigation season. The lease is expected to improve rainbow trout spawning and reproduction in the creek that will improve the fish population in the Jefferson River.

The seventh lease is with an individual on Mill Creek where the first two leases were obtained. He has considered leasing since the first two leases were obtained two years ago. However, he preferred to wait and see how those leases turned out before committing himself. This person is also on the pipeline and MFWP leases his salvaged water. The agreement was completed in August, 1995 and will be implemented in 1996.

After the lease agreements were completed or, when it appeared they would be completed, FWP submitted applications to DNRC to change the purpose and place of use of the water rights to instream flow. Once the change applications were accepted by DNRC, public notices were sent to potentially affected water uses and to local newspapers for publication. This allowed any objections to the leases to be filed. Hearings were held on two of the change applications (Cedar Creek and Tin Cup Creek) to allow objections to the leases to be heard. No objections were received on the other five leases. All of these leases were eventually approved by DNRC.

COST OF LEASES

Appendix A summarizes the pertinent features and costs of the approved leases.

MFWP makes lease payments to lessors from a license fee account. No federal money is involved. However, studies required to evaluate a lease can be paid for from a Wallop-Breaux account (an account that receives funds paid to the federal government from manufacturers' excise taxes on fishing equipment and on motor boat fuel). These funds are matched by license fees.

At the beginning of the leasing study, The Montana Nature Conservancy in Helena, Montana established The Montana Water Leasing Trust Fund in conjunction with a public attitude survey of the need for instream flows. Surveyed persons were asked if they would be willing to contribute to a fund to help pay for instream flow leases. Then, they were asked to actually contribute to the fund. About $7,000 were raised and used to help pay for the second lease on Mill Creek. The fund is no longer active.

BENEFITS OF LEASES

During the early stages of the leasing program, MFWP realized that leases would have to be obtained on small streams rather than on larger rivers. The large quantity of water required to substantially improve flows and the many water rights required would make leases on larger rivers too complicated and it would be difficult to avoid adverse effects. Consequently, all of the leases so far obtained are on small tributary streams that are used for spawning by the larger river fish. By increasing the spawning potential and numbers of young fish that go back to the rivers, the leases increase the river fish populations and, subsequently, improve angling opportunities.

FWP does not make cost/benefit analyses of water leases. Although the costs can be accurately determined, the economic benefits to the stream or larger river systems are difficult to calculate. Predictions can be made of the increase in fish populations due to improved spawning and dollar values for angling use can be estimated. However, the predictions are subject to large error. Because of this poor accuracy, MFWP does not make these predictions. Instead, we monitor the spawning streams before and after a lease and determine if more fish are produced. If so, we assume benefits accrue to the fisheries from the standpoint that, if there are more fish for the angler, fishing will improve and there will be economic benefits that results from increased angler use.

A single lease may or may not provide all the water that is needed to improve streamflows. In all of the streams except Mill Creek, the leased water is sufficient. However, Mill Creek is a larger tributary and will require additional leases to obtain an adequate base flow.

MONITORING AND PROTECTION OF LEASES

Because "first in time is first in right", the priority date of leased water is extremely important to its protection in the stream. All seven of the leases have the first, or one of the very earliest, water rights on the stream, giving instream flows priority over other uses that divert water from the channel. This particularly important in low flow years.

The first two Mill Creek leases have been implemented for three years. The third Mill Creek lease was implemented in 1995. The leases are monitored by MFWP with the assistance of a water commissioner who administers all the rights on the creek. The commissioner makes sure the leased rights are maintained in the stream reach by protecting them from junior appropriators.

The Blanchard Creek lease has also been in effect for three years. The only water user on the stream is the lessor and no protection of the leased water from others is needed.

The Tin Cup Creek lease was first implemented in 1995. A water commissioner administers the

lease along with other water rights.

The Hells Canyon Creek leases will first be used in 1996. The only three Hells Canyon Creek water users are all parties to the lease and we do not expect a water commissioner will be needed.

The Cedar Creek lease will first be implemented in 1996. There are other users on the stream and a commissioner may be required if informal administration of the lease is not effective.

LEASE NEGOTIATIONS

Leasing agreements obtained so far were obtained with various degrees of difficulty. The most difficult agreement was on Hells Canyon Creek where it took almost three years to get a final agreement with the water users. The easiest agreement was the third agreement on Mill Creek. It took only a few months to achieve because it was based on the leasing history and a previous agreement on the same stream.

Successes in obtaining agreements depends as much on the good faith of the parties as it does on the facts of the situation. MFWP has conducted its own negotiations for some leases and has been assisted by an outside attorney for others. If a lease is relatively simple, an outside attorney is not necessary (MFWP has its own legal staff that often prepares agreements and also must approve the legal content of all final lease agreements). However, on the complicated Hells Canyon lease, the other parties each had an attorney and MFWP used an outside attorney because of the time commitment required.

MFWP has investigated about 85 potential water leases during the first six years of the program. Most of them were not pursued because the water rights were: Too small to help the stream; in the wrong location; had a poor priority date; appeared to be an invalid water right; had too short a period of use; had questions about abandonment; would have known adverse effects on other users, etc.

THE FUTURE OF LEASING

Montana's leasing program is still in its infancy. We are seeing more interest in leasing as the original concerns subside and word spreads that leasing is not the bogeyman it was first thought to be. Also, the change process protects those who believe a lease will affect their water rights.

MFWP is currently investigating several other potential leases. These are on tributary streams to larger rivers and would either improve spawning for these rivers or would improve the habitat for fish that reside in the smaller streams year-round.

In some instances, land ownership changes are the reason for a water lease. New owners may

not use agricultural land the same way as did the former owners. Some are interested in improving the stream(s) on their property for receational purposes. This type of interest may increase over time.

CONCLUSION

MFWP's water leasing program was, perhaps, "fraught with problems" in the beginning and is still not completely understood or accepted by some. But, with the passing of time and an ensuing dialog, it is now supported by many of its former foes.

Water leasing for instream flows will not solve all of Montana's dewatering problems because of the complexity of obtaining leases, the small quantities of water that are usually involved and the potential effects on existing water users. However, it is one means to help balance the competing uses of a finite water resource.

MFWP will continue to pursue leases in a careful but deliberate manner that will improve fish habitat, fish populations and fishing opportunities.

Rivers and streams benefit our lives emotionally and economically. We seek out flowing waters for many reasons: Fishing, hunting, swimming, boating, agricultural use and for drinking water. Historically, out-of-stream water use has had the priority and has reduced the quality of the instream uses in many rivers and streams. Contemporary attitudes in Montana are toward rectifiying that situation through water leasing to once again allow a stream to use some of its own water.

"A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it."

-- Justice Oliver Wendell Holmes, Jr.

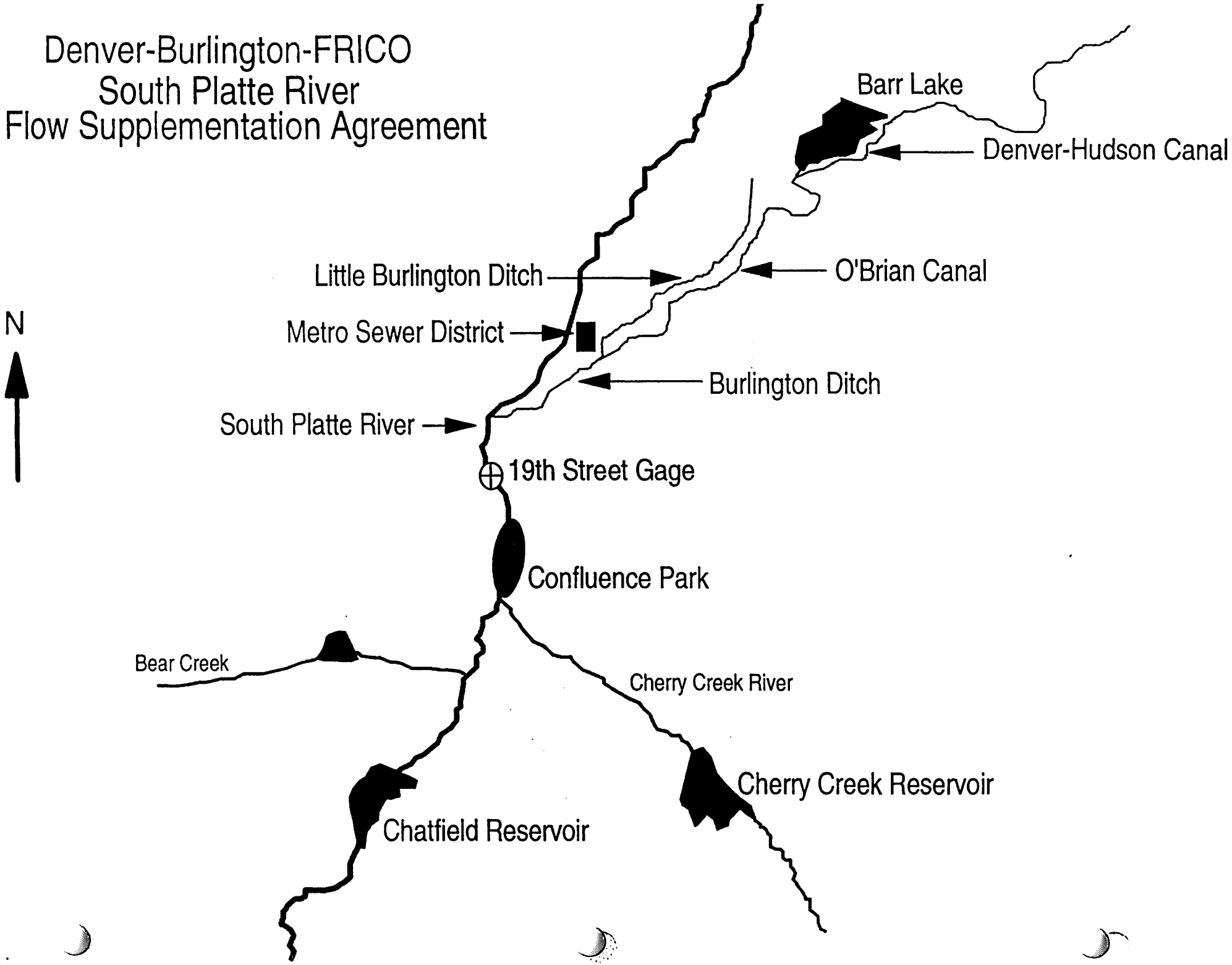
APPENDIX A

Features and Costs of Seven Water Leases

SOURCE	LESSOR	TERM OF LEASE	PRIORITY OF RIGHT	QUANTITY LEASED	PERIOD OF USE	COST
Mill Creek	Mill Creek Water and Sewer District	10 years	95 rights with various priorities	Up to 65 cfs	48-60 hours in Aug. Diversion shut off after 10 day notice from FWP.	$12,750 per year[1]
Mill Creek	Individual	10 years	June 30, 1880; June 1, 1903	2.0 cfs (1880) and 4.13 cfs (1903) (salvaged water)	May 1 - October 4	$7,500 per year
Blanchard Creek	Individual	5 years	May 11, 1913 (first right on stream)	3.0 cfs	April 15-October 15	Up to $2,000 per year
Tin Cup Creek	Six Individuals	5 years	August 1, 1883 (first right on stream)	2.28 cfs April 1-April 14 4.32 cfs April 15-April 30 4.72 cfs May 1-October 19 1.8 cfs October 20-November 4	April 1-November 4	$6,260 per year
Cedar Creek	U.S. Forest Service	10 years	April 1, 1890, April 1, 1893, April 1, 1898, April 1, 1904, April 7, 1972 (high water rights only)	6.77 cfs May 1 - July 15[2] 6.39 cfs July 16 - July 31 9.64 cfs August 1 - August 31 6.39 cfs Sept 1 - October 15	May 1 - October 15	$1.00 per year
Hells Canyon Creek	Three Individuals	20 years	December 31, 1884 (first right on stream), August 23, 1889, August 29, 1912	1.12 cfs (salvaged water)	April 1-November 4	$25,000 - One time payment
Mill Creek	Individual	10 years	June 1, 1891	2.64 cfs (salvaged water)	May 1 - October 19	$4,200 per year

[1]Lessor pays for water commissioner and the installation of measuring devices on all on-farm turnouts from the pipeline.

[2]These rights are used to maintain a flow of 1.3 cfs at the mouth of Cedar Creek, eliminating effects on other water users.


Denver-Burlington-FRICO
South Platte River
Flow Supplementation Agreement
Barr Lake
Denver-Hudson Canal
Little Burlington Ditch
O'Brian Canal
N
Metro Sewer District
Burlington Ditch
South Platte River
19th Street Gage
Confluence Park
Bear Creek
Cherry Creek River
Cherry Creek Reservoir
Chatfield Reservoir

Denver Board of Water Commissioners

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Denise S. Maes
William J. Shoemaker

Hamlet J. Barry, III, Manager

1600 West 12th Avenue
Denver, Colorado 80254
303/628-6000
Fax 303/628-6509

June 7, 1996

Mail Code 413

Mr. Albert Sack, President
Farmers Reservoir and Irrigation Company
80 South 27th Avenue
Brighton, CO 80601

Mr. Harlan Wall, President
Burlington Ditch, Reservoir, and Land Company
80 South 27th Avenue
Brighton, CO 80601

Dear Mr. Sack and Mr. Wall:

Representatives of the Farmers Reservoir and Irrigation Company (FRICO) and the Burlington Ditch, Reservoir, and Land Company (Burlington), jointly referred to as Companies, have been meeting with representatives of the Denver Water Department (Denver) concerning procedures which could be used to enhance the stream flow of the South Platte River through Denver. These procedures would involve the joint operation of the Companies' Barr Lake system and Denver's upstream storage and diversion system to regulate, within the strictures of the decrees and without wasting, water for the purpose of supplementing flows of water in the metropolitan reach of the South Platte. On behalf of the Board of Water Commissioners, I want to express the appreciation and gratitude of the Board for the cooperation and assistance you and other Companies' representatives have given this effort.

The following criteria have been used to guide the discussions for this effort:

1. Maintain flows during average and above average snowmelt runoff years at or above 150 cubic feet per second (cfs) as measured at the 19th Street gage.
2. Maintain such flows between May 16 and September 15.
3. Limit the amount for supplementation so that the total volume of supplemental flow does not exceed 1500 acre-feet (a.f.) annually.

For the purposes of this arrangement, the Companies' Barr Lake system includes the Burlington Ditch headworks, the Burlington Ditch, the O'Brian Canal, and Barr Lake. The basic tenets which would be followed under the proposed arrangement are set forth below.

FRICO/Barr Lake and Denver Joint Operations

19th Street Gage

1. When Denver expects the flow in the South Platte River will drop below 150 cfs as measured at the 19th Street gage, Denver may release water from its upstream storage for diversion at the Burlington Ditch headgate for delivery to Barr Lake.

Minimum Release

2. The minimum amount released under this program, unless otherwise agreed by the parties, will be such as to deliver 30 cfs of water divertable at the Burlington headgate. Such water may include water released by Denver from upstream facilities or other water that may be available to Denver (excluding pumping from Metro Sewer pump station).

Notification

3. Denver will give the Companies at least 12 hours' notice before such a release is made or the rate of release is changed. Such releases or changes in release rate will be made to the extent practical such that the adjustments to the Burlington Ditch headgate at the South Platte River necessary to divert such water can be made between 7:00 a.m. and 11:00 a.m. Denver will not change the rate of release more than once per day.

Annual Volume

4. No more than 1500 a.f. of such water will be released annually and will be released only in whole units of cubic feet per second-day during the period of May 16 through September 15.

Stream Conveyance Losses

5. Denver will bear all river or transmission losses between the release point and the Burlington Ditch headgate which may be assessed by the State Engineer.

Denver Water Account

6. The released water will be credited to a "Denver Water Account" in Barr Lake after adjusting for ditch conveyance losses in the Burlington Ditch and O'Brian Canal as described below.

Barr Lake Losses

7. The Denver Water Account in Barr Lake will be assessed a pro rata portion of the net evaporation and seepage losses from Barr Lake. The losses will be determined by taking the ratio of the volume of water in the Denver Water Account divided by the total volume of water in Barr Lake and multiplying the ratio by the assumed losses as set forth in Table I, attached.

Repayment of Water

8. Repayment of the amount in the Denver Water Account will be made at such time as there exists a call against Denver's upstream facilities for water at the Burlington Ditch headgate at the South Platte River for water which would be delivered to storage in Barr Lake. Repayment will be made by exchange through the retention by Denver of water which it otherwise would have passed by virtue of the call at the Burlington headworks against the Denver system. The rate of repayment shall be as the parties' operating representatives may agree with due regard for other water rights in the South Platte River between Denver's upstream facilities and the Burlington Ditch headgate. Unless otherwise agreed, the repayment shall be to the extent practical at a rate which does not cause the residual amount divertable at the Burlington Ditch headgate at the South Platte River to fall below 30 cfs.

Ditch Conveyance Losses

9. At such time as the Denver water is being conveyed through the Burlington Ditch and O'Brian Canal, the Denver Water Account in Barr Lake will be credited with the amount of the Denver water available for diversion at the Burlington Ditch headgate at the South Platte River, less a portion of the total operational ditch loss attributable to the conveyance of the Denver water in the Burlington Ditch and O'Brian Canals.

A. All water delivered through the Burlington Ditch to the Little Burlington bifurcation will be assessed ditch conveyance losses. Such losses will be determined as a percentage of the water diverted from the South Platte River at the Burlington Ditch headgate as measured at the Sand Creek gage. There presently is no direct and readily available means of measuring water delivered to the O'Brian Canal at the Little Burlington bifurcation. However, water delivered to the Little Burlington Ditch at the bifurcation can be measured at an existing gage. Accordingly, for purposes of initial operations under this agreement, water delivered to the Little Burlington bifurcation will be assumed to incur a ten percent (10%) loss in the Burlington Ditch. Deliveries for Barr Lake through the O'Brian Canal at the Little Burlington bifurcation will then be the difference between the amount of water delivered to the Little Burlington bifurcation and the measured deliveries to the Little Burlington Ditch. The assumed loss of 10 percent will be adjusted as appropriate based on actual measurement which may be made as described below.

B. Denver losses in the O'Brian Canal are to be determined as follows:

1) When the lake elevation in Barr Lake is less than gage height 29.0, ditch conveyance losses in the O'Brian Canal will be calculated as: $\frac{(D_D)(Q_{OB} - Q_{DH})}{Q_{OB}}$

where:

D_D = Denver water delivered at the Little Burlington bifurcation to the O'Brian Canal,

Q_{OB} = deliveries through the O'Brian Canal at the Little Burlington bifurcation, and,

Q_{DH} = measured deliveries to Barr Lake at the Barr Lake weir and Denver-Hudson flume.

2) When the lake elevation in Barr Lake is 29.0 or higher, thus rendering the gage which measures water delivered to Barr Lake at the Barr Lake/Denver-Hudson bifurcation inoperable, ditch conveyance losses in O'Brian Canal will be determined using Table II, so long as there is flow in the O'Brian Canal at the Barr Lake/Denver-Hudson bifurcation. If there is not flow in the O'Brian Canal, no amount of water will be credited to the Denver Water Account in Barr Lake.

Table II
Percent Ditch Conveyance Loss in O'Brian Canal

Flow* (cfs)	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-149
Percent	68	60	54	49	44	41	38	35	29

*Total flow in the O'Brian Canal, including the Denver water, at the Little Burlington bifurcation.

Term

10. This agreement shall be on a year-to-year basis for up to 5 years. Either party may terminate the operations for an upcoming year for any reason by giving 30 days' written notice prior to May 15 of each year.

Contacts

11. All communication concerning operations under this arrangement between the Companies and Denver will be directed as follows:

Companies

Manuel Montoya
The Farmers Reservoir and Irrigation Co.
80 South 27th Avenue
Brighton, CO 80601
Telephone: 659-7373
Fax: 659-6077

Denver

Raw Water Control (Mail Code 411)
Denver Water Department
1600 West 12th Avenue
Denver, CO 80254
Telephone: 628-6510
Fax: 628-6852

Approval

12. Denver will be responsible for obtaining any approvals necessary from the State or Division Engineer's Office, and the Companies will provide assistance as needed to facilitate approval.

Measurement

13. The parties agree to cooperatively gather data concerning ditch conveyance losses in the Burlington Ditch and O'Brian Canal. To this end, the Companies will permit Denver to perform whatever ditch measurements Denver deems appropriate to obtain such data provided Denver gives 24 hours' advance notice of its intent to take such measurement. Based on this or other data, the ditch conveyance losses set forth in paragraph 9 above may be adjusted upon mutual consent of the Companies and Denver. The parties agree to share the results of any measurements made or data gathered pursuant to this paragraph with one another.

Contingencies

14. The operating procedures set out in this letter have been developed to enhance stream flow of the South Platte River through Denver. Should the parties encounter operational problems in implementing these procedures, or devise better procedures for accomplishing these objectives, the parties agree that their respective representatives may, subject to mutual agreement, amend or make such other modifications to the procedures in order to accomplish this objective.

Communication and Accounting

15. Denver will on a daily basis initiate communication by telephone with the Companies whenever water is being delivered to the Burlington Ditch headworks or repayment to Denver is being made from water in the Denver Water Account in Barr Lake. Denver will also initiate communication as often as necessary to verify account balance whenever there is water in the Denver Water Account. Denver will maintain such water accounting records as may be necessary to determine the amount in the Denver Water Account, including water deliveries, transmission and ditch conveyance losses, evaporative and seepage losses of the Denver water residing in Barr Lake, and the balance of the Denver Water Account. The Companies agree to supply all requisite information necessary for Denver to maintain such records.

Maintenance on the O'Brian Canal

16. The Companies agree to coordinate, so far as possible, any required maintenance on the O'Brian Canal to accommodate this exchange. However, in the event that necessary maintenance is required which would prevent water from being delivered through the O'Brian Canal, such maintenance shall have priority over this exchange.

Conformance to Charter

17. This Agreement is made under and conformable to the provisions of the Charter of the City and County of Denver, which controls the operation of the Denver municipal water system, consisting of Section C4.14 through C4.35 of said Charter. Insofar as applicable, said Charter provisions are fully incorporated herein and made a part hereof by reference and shall supersede any apparent conflicting provisions otherwise contained in this Agreement.

If you find the above arrangements acceptable, please so indicate by signing below and returning a signed copy to this office. Again, we very much appreciate the time and attention you and others representing FRICO and the Burlington Company have given this matter.

Sincerely,

H. J. Barry
Manager

Albert Sack, President
Farmers Reservoir and Irrigation Company

Harlan Wall, President
Burlington Ditch, Reservoir, and Land Company

APPROVED AS TO FORM:

Legal Division

APPROVED:

John Akolt

Attachments

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Table I
BARR LAKE
Elevation/Area/Capacity/Seepage Losses

Contour Elevation	Gage Height	Area (acres)	Capacity (acre feet)	Seepage Loss (acre feet/day)
5060	0	191	0	4.0
5061	1	223	25	5.0
5062	2	263	150	6.0
5063	3	299	300	7.0
5064	4	332	546	8.0
5065	5	367	896	9.0
5066	6	401	1280	10.0
5067	7	442	1701	11.0
5068	8	484	2164	12.0
5069	9	517	2665	13.0
5070	10	551	3199	14.0
5071	11	583	3766	15.0
5072	12	620	4367	16.0
5073	13	669	5012	17.0
5074	14	717	5705	18.0
5075	15	765	6446	19.0
5076	16	817	7237	20.0
5077	17	867	8079	21.0
5078	18	920	8972	22.0
5079	19	994	9930	23.0
5080	20	1064	10959	24.0
5081	21	1116	12049	25.0
5082	22	1156	13185	26.0
5083	23	1211	14369	27.0
5084	24	1281	15615	28.0
5085	25	1350	16931	29.0
5086	26	1410	18311	30.0
5087	27	1478	19755	31.0
5088	28	1552	21270	32.0
5089	29	1616	22854	33.0
5090	30	1681	24503	34.0
5091	31	1742	26215	35.0
5092	32	1790	27981	36.0
5093	33	1836	29794	37.0
5094	34	1879	31652	38.0

EVAPORATIVE LOSSES

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Inches	1.69	1.69	3.67	5.58	7.16	8.4	8.4	7.16	5.58	3.67	1.67	1.67

Example: Denver has 500 acre feet in the Denver Water Account in August when the Barr Lake gage height measured 19 feet.

Total seepage loss is 23 a.f./day
Net evaporative loss is (7.16 inches/12 in. per ft.) (994 acres) (1/31 days per mo.) = 19 a.f./day
Total losses: 23 + 19 = 42 a.f.
Denver's proportional share of Barr Lake losses; 42(500/9930) = 2 a.f./day

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Post 8/19/94

A river once again

If the Good Lord's willing and the creek don't dry, Denver should be on the way toward making much better use of the in-town stretches of the South Platte River as a civic attraction.

Thanks to leadership from the Webb administration, particularly from Water Board Commissioner Joe Shoemaker, who was appointed to the Board a year ago, an agreement has been struck between the city and the downstream Farmers Reservoir and Irrigation Co. (FRICO) to deliver some water FRICO owns anyway at a time different than when the agricultural organization had been expecting it.

Said water delivered during the peak summer months from May to September will hopefully provide enough consistent summer low in the historically sluggish river to enable boating, fishing, and other types of enjoyment, including appearance. The idea is to transform the old trickle into a "civic amenity," meaning something that the average citizen can enjoy.

BILL HORNBY

It is unlikely the South Platte will soon enable dockings by cruise liners at the summertime Port of Denver, but a punt or two might make it. A punt, for the yups, is a small rowboat in which you take a girl with a parasol out to feed her lemonade and your very best line. A mandolin and a straw hat are standard issue for such paradisical safaris.

This agreement seems a simple solution to the very old problem of making the river of some fun to them as live along it in the city. No money changes hands and the FRICO folks store their own water for use when they want it.

Nothing is wasted, and human enjoyment is advanced. By a tad.

"Administering flows in the river so irrigators and recreational interests can both make beneficial use of Colorado's precious water is a win-win accomplishment," says Shoemaker, ramrod of many of the improvements made along the urban river in the past decade or so.

But the solution was far from simple in the achieving. The five-page agreement between city and countryside sounds as if it had been drawn by a bevy of contesting monks examining a Christian heresy. Acre-and cubic-feet, average stream flows, snowmelt runoff, minimum release, notification, net evaporation, seepage, annual volume, stream conveyance losses, ditch conveyance losses, etc., etc. are covered in language dear to the hearts of the water lawyers. These worthies still operate most successfully on the theory that the less the ordinary citizen understands about water, the better.

Just for the record, the agreement says that between May 16 and September 15, the Water Board may send downstream to the FRICO system at or above 150 cubic feet per second as measured at the 19th Street gauge, and that the total volume of this "supplemental flow" shall not exceed 1500 acre-feet annually.

The agreement will be on a year-to-year basis for five years, with either partner being able to quit for any upcoming year upon 30 days notice. Hardly a "till death do us part" pact, but the relations between urban water folk and rural water folk are historically akin to those of the Serbs and the Muslims in Bosnia.

This great South Platte River Breakthrough is hardly a major news item, except that it happened at all. For years various folks have been trying to get such joint water management agreements between the city and the countryside.

A great deal more use could be made of such water as Colorado has if the number of joint management contracts between governments could continue to grow. For years the hostility between the Denver Water Board and suburban and out-state water agencies was so intense that simply changing the schedule of sending water down river could end up in court. Everything about water could end up in court.

In addition to rural/urban hostility, during the Middle Ages (1940-1980) the old mindset, especially of the Denver Water Board, was that the recreational and other environmental benefits of water supply were not the professional business of water managers. That mindset has changed only in slowly arriving 'increments', of which this South Platte happening is a tiny but quite important example.

Bill Hornby, former editor of The Denver Post, hopes for the day when he might float the Platte River to New Orleans.

DRAFT

WESTERN WATER TRANSFERS: PUBLIC INTEREST IMPACTS

Prepared by

Larry Morandi

National Conference of State Legislatures
1560 Broadway, Suite 700
Denver, Colorado 80202
(303) 830-2200

May 1991

EXECUTIVE SUMMARY

The major shift in western water policy that began during the 1980s and continues into this decade is the reallocation of water to higher valued uses. The basis for this change is a scarcity of reasonably priced water as streams become fully appropriated, aquifers mined, and large water development projects defeated by growing environmental and economic opposition. With the demise of proposed reservoirs like Colorado's Two Forks, local governments are seeking supplemental supplies in the market through water transfers.

A water transfer may involve a change in the point of diversion, place of use, or type of use. Conflicts over water transfers focus on those that entail a change from a rural area to a municipality that carry environmental and economic costs in the basin of origin capable of generating opposition similar to that for dam proposals. There is a need to balance legitimate water demands of municipalities with the equally legitimate concerns of communities in the exporting basins who stand to absorb whatever impacts may occur. The balancing act will help to define which water transfers are in the public interest.

Legislation requires public interest review for proposed water transfers in the majority of western states. These laws often are vague, however, in suggesting to regulators how public interest considerations should be weighed. Public interest criteria vary in their definition. Many statutory provisions place significant discretion in a regulatory entity with jurisdiction over transfer applications. There are state statutes that define the public interest to protect fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation, water quality, access to public waters, minimum stream flows, and to prevent waste and promote conservation.

Beyond environmental concerns, some state laws preclude water diversions that may have adverse economic impacts in the area of origin. There is also support building within the water community for proposals to require consideration of impacts on less easily defined rural community values as a condition for transfer approval. The differences in statutory treatment of the public interest raises the question: does listing specific criteria define for a regulatory agency what the public interest is or does it more appropriately acknowledge that there is room for interpretation depending on changes in societal interests?

There are three sets of options that a legislature may consider to incorporate public interest criteria into water transactions. They are not mutually exclusive and, as a package, can provide an administrative agency with flexibility in balancing competing public interests vying for scarce water. The first involves defining and applying the public interest, which may be accomplished by specifying criteria in statute or by leaving it up to a regulatory agency to determine what factors are appropriate. Absent specific statutory guidance, the legislature may place the burden of assessing potential impacts on the transfer applicant (as in an environmental impact review). Although such an approach would display impacts, it would not decide whether the impacts justify approval or denial of a transfer. An alternative would be to establish a regional water planning process wherein local communities identify public interest values attributable to water in the area of origin and convey those findings to the regulatory agency responsible for reviewing transfer applications.

The second set of options would condition water transfers to protect the public interest, emphasizing mitigation and compensation measures to offset impacts. Mitigation may take the form of providing alternative water supplies to meet future needs in the basin of origin or planting formerly irrigated land with native drought-resistent grasses to prevent

soil erosion. Compensation may include direct cash payments for losses of property tax revenue from farmland taken out of production. Revenue may be placed in a trust fund in the area of origin to mitigate damages incurred over time.

The third alternative would provide financial incentives to conserve water and transfer it to higher valued uses. Allowing the transfer of conserved water may satisfy some alternative uses without diminishing scarce water supplies and adversely affecting basins of origin. Because 80 percent to 90 percent of the water consumed in the western states is held by agricultural water rights, the farming community will be the target of most conservation-transfer proposals. When combined with water conservation efforts in urban areas, the transfer of conserved agricultural water often is viewed as a means to supplement municipal water supplies. Absent incentives to conserve water and transfer it to other users, farmers may be faced with an all-or-nothing proposition during lean economic times--keep using the water as before or give up farming altogether by selling the water rights.

Summary Statement of Larry Morandi
National Conference of State Legislatures
"Water Transfers and Environmental Protection"
Colorado Water Workshop
Gunnison, Colorado
July 23, 1991

Public interest considerations are incorporated into water allocation decisions in a number of ways: through statutory definitions of criteria; court-imposed directives; land use regulations; and regional planning processes. It makes little difference whether an application to move water from one basin to another is for an original appropriation or for the transfer of an existing water right--interbasin diversions are likely to generate opposition regardless of the legal regimen employed to assess their effects. In those instances where state law provides no requirement for public interest review, litigation may be used by protestants to leverage concessions--in the form of environmental mitigation or financial compensation--by transfer proponents.

Growing political sensitivities to environmental, economic and community concerns have made transfer proponents more willing to negotiate conditions to reduce impacts on basins of origin. Where the applicants have relied exclusively on traditional protections accorded to water rights in the law, they have seen protracted litigation and administrative proceedings drive up the costs of water transactions, thereby diminishing their value.

Since all western state water allocation systems allow for some degree of public interest review of water transactions regardless of the formal statutory or case law framework, the most appropriate role for state legislation may be to promote the more *efficient* operation of those systems. This objective may be accomplished by providing regulatory agencies and the courts with clearer direction as to what constitutes the public interest (including specific environmental and economic criteria that must be considered), as well as defining those interests that have legal standing to challenge a water transfer. The initial approach would help structure the permit review process and alert transfer applicants to the issues that may have to be included in an environmental impact assessment (which may assist them in determining whether their proposal is cost-effective). The second would help the agency or court with jurisdiction in conducting the hearing process.

A more comprehensive approach would be to authorize regional water planning forums and to incorporate the resultant planning documents into state administrative hearings, thereby providing regulatory agencies with information on the values attributed to water in a specific area in advance of a transfer application. The focus of a subsequent decision then may shift from determining appropriate mitigation measures (which may not satisfy either party involved in the transaction) to finding alternative sources of water supply for both the applicant and residents in the basin of origin.

PART ONE: THE PUBLIC INTEREST IN CONTEXT

When asked why California, which has enacted the most legislation to remove obstacles to the reallocation of water, had experienced so little market activity, a senior Department of Water Resources official in 1988 responded, "Owens Valley." The Owens Valley experience illustrates the environmental and economic impacts on rural communities that can result from transfers of water to municipal use. Los Angeles purchased 95 percent of the valley's irrigated land and the corresponding surface water rights by the mid-1930s. The city eventually retired 55,000 acres of farmland, reducing irrigated acreage from 75,000 acres to 20,000 acres, in order to transfer water to meet urban growth in Southern California. In response to a state Water Resources Control Board directive in the mid-1960s to develop its water rights fully or lose them, Los Angeles added a conveyance facility, retired an additional 8,000 acres of farmland, and increased surface water diversions and groundwater pumping.[1]

Inyo County, site of much of the Owens Valley, filed suit against Los Angeles in 1972, alleging, in part, that the loss of wetlands and other vegetation associated with the city's groundwater pumping violated the state's Environmental Quality Act. An appellate court decision the following year cut LA's groundwater pumping in half and required the preparation of an environmental impact report as a condition for full reinstatement. Two environmental impact reports--one completed in 1977 and the other in 1981--were found by the court to be inadequate.[2]

Inyo County subsequently sought to limit Los Angeles' groundwater pumping through the adoption of a local ordinance. A trial court ruled the action unconstitutional in 1983. The court decision prompted the formation of the Inyo/Los Angeles Standing Committee in 1984 to design a groundwater management plan that would protect the valley's environment and provide Los Angeles with sufficient water.[3] The negotiation

process--which may have been fostered by the city's recognition that the 1983 state supreme court *Mono Lake* decision could restrict its water use on "public trust" grounds--and final settlement illustrate the incorporation of public interest criteria into a water allocation decision.

A preliminary agreement between Inyo County and Los Angeles on a long-term groundwater management plan was released on March 31, 1989, as required by the court. The plan's objective is to "create no significant adverse impact in the Owens Valley which cannot be avoided or acceptably mitigated, while providing a reliable supply of water for export to Los Angeles and for use in the Owens Valley."[4] Since Inyo County's principal concern was receding vegetation, the two parties agreed to jointly operate a monitoring program--the guts of the agreement--that would measure groundwater levels and soil moisture to determine when wetlands might be affected by groundwater pumping. The plan established five vegetation classifications with a targeted management strategy for each.[5]

In addition to groundwater management policies, the plan contained what might be termed financial mitigation components. Los Angeles agreed in principle to:

- Spend up to $2 million over the next ten years for local parks, campgrounds, and recreational facilities (the valley's economy is increasingly becoming more dependent on recreation and less on agriculture).
- Fund a $750,000 three-year salt cedar reduction program.
- Contribute $100,000 for the rehabilitation of the Big Pine irrigation ditch system.
- Pay the county $1 million annually "to assist the county in providing services to its citizens."

- Pay the county $750,000 annually "to assist the county in funding water and environmentally related services."[6]

The preliminary agreement ran into strong local opposition in the Owens Valley in May 1989, however, forcing the Inyo County Board of Supervisors to reopen negotiations with Los Angeles on a revised agreement. The basis for objections was not a lack of sufficient financial compensation, but inadequate protection of the environment (which suggests that certain impacts are not compensable).[7] A revised agreement was concluded in July 1989, and approved by the Inyo County Board of Supervisors and Los Angeles in August. The final settlement requires additional groundwater monitoring and closer examination of the effects of pumping on vegetation, and applies the program throughout the Owens Valley, not just Inyo County. The city also agreed not to expand the capacity of its water conveyance facilities leaving the valley for Los Angeles.[8]

An interesting political evaluation of the rural county's handling of the negotiations was rendered in the November 1990 elections. Three Inyo County supervisors who supported the final agreement were placed on the ballot for recall. All three retained their seats, however, by substantial margins (the votes in support of the recall efforts ranged from 39 to 42 percent).[9] The electorate's ratification of the agreement is significant in that it may dispel fears among other community leaders that negotiating water transfer settlements that are in the best interests of the community will not automatically result in political retribution. The Inyo County/Los Angeles example suggests that local public interest values--as defined by a package of environmental protection and mitigation measures, and reasonable water supply levels--can be incorporated into water reallocation decisions to the satisfaction of both parties.

PART TWO: DEFINING THE PUBLIC INTEREST

As the economic and environmental costs of water development projects rise, western states are looking increasingly to reallocate existing supplies to meet higher valued uses. Economic costs are fairly straightforward; they include financial expenses for construction, operation, and delivery of water supplies to end users. Environmental costs are less easily quantifiable; they entail actual damages to ecosystems dependent on instream flows and the administrative and litigation costs incurred by water development proponents and opponents in the decisionmaking process. Often the most controversial component of the reallocation equation, however, is determining what are the higher valued uses intended to be satisfied by water transfers.

Water reallocation is accomplished principally through the use of markets. A water market can be defined as an "institutional setting within which the right to water is bought, sold, rented, or traded among consenting parties."[10] The market allocation of water comes under state regulatory purview--either through administrative agency or court proceedings--at the point where a transfer of water rights is proposed. A water transfer may involve a change in the point of diversion, place of use, or type of use. Conflicts over whether a water transfer serves a higher valued use tend to focus on those that entail a change in the place of use and type of use, e.g., transfers from a rural area of origin to a municipality. These may carry with them environmental, economic, and social costs that will require the legislature to develop criteria that must be considered in the decisionmaking process.

Because water rights in most western states that adhere to the prior appropriation doctrine are considered to be property rights, they can be leased or sold provided they do not adversely affect existing water rights. In addition to this nonimpairment rule, several states require the regulatory entity reviewing a proposed transfer to consider its impact on the "public interest," generally a vaguely defined term that nonetheless attempts to account

for environmental or rural community interests that are not directly involved in the negotiations surrounding a water transaction.

Statutory Definitions

State statutory provisions require public interest review for appropriations and transfers. All but two (Colorado and Oklahoma) of the 18 western prior appropriation states incorporate public interest criteria into new appropriation permits.[11] Ten apply public interest considerations to transfer applications.[12] (The reason for differential treatment is that appropriated water is considered to be *real property* whose transfer requires compensation--which implies that some degree of public interest review has occurred--while unappropriated water is a *public resource* available to the next applicant without compensation; this report considers the distinction to be irrelevant, however, and treats the public interest impacts of original appropriations and transfers in the same manner). These laws are often vague, however, in suggesting to regulators how public interest considerations are to be balanced. One legal scholar has cautioned that "even those statutes that give considerable guidance concerning factors relevant to public interest review typically offer little help on how to weigh them."[13]

Public interest criteria vary in their definition. Many statutory provisions place significant discretion in a regulatory entity with jurisdiction over transfer applications. New Mexico's law allows the transfer of water from irrigation to other purposes based on a determination by the state engineer that any proposed changes can be made "without detriment to existing water rights and are not contrary to conservation of water within the state and *not detrimental to the public welfare of the state* [emphasis added]." (N.M. Stat. Ann., 72-5-23)

South Dakota's statutory provisions are similar. A transfer is permitted only if the change "does not unlawfully impair existing water rights and is for a beneficial use and *in the public interest* [emphasis added]." (S.D. Codified Laws Ann., 46-2A-12) Nevada's legislation requires the state engineer to reject a transfer application where the proposed change in use "conflicts with existing rights, or *threatens to prove detrimental to the public interest* [emphasis added]." (Nev. Rev. Stat., 533.370)

Idaho's experience in defining the public interest is especially interesting because the state has both statutory and case law affecting water transfers. The statutory provisions are vague; the court ruling much more specific. The director of the Department of Water Resources is charged with approving a proposed transfer provided the change in water use, among other criteria, "is in the local public interest as defined in section 42-203A(5), Idaho Code; except the director shall not approve a change in the nature of use from agricultural use where such change would significantly affect the agricultural base of the local area." (Idaho Code, 42-222) The section referenced in the statutes defines the local public interest as "the affairs of the people in the area directly affected by the proposed use."

The application of Idaho's public interest definition is illustrated in a 1988 decision by the director of the Department of Water Resources approving a transfer of 15,900 acre-feet of water to a new agricultural use; the local public interest was defined in economic terms. The director acknowledged that although the transfer might slightly decrease crop prices, it would stimulate the local economy through the sale of goods and services associated with crop irrigation, increase the local tax base, and create jobs.[14]

The Idaho Supreme Court has provided an expansive definition of what constitutes the public interest. In *Shokal v. Dunn*, 707 P.2d 441 (Idaho 1985), the court required the Department of Water Resources to reassess its granting of a permit to appropriate water

for fish propagation and hydropower generation to determine if the following interests had been adequately considered:

(1) fish and wildlife habitat;

(2) protection of aquatic life;

(3) recreation;

(4) aesthetic beauty;

(5) navigation;

(6) water quality;

(7) access to public waters;

(8) minimum stream flows;

(9) waste prevention; and

(10) the promotion of conservation.

Although developing a comprehensive list of public interest considerations, the court went further in suggesting the differential manner in which the factors should be weighed:

> The relevant elements and their relative weights will vary with local needs, circumstances, and interests. For example, in an area heavily dependent on recreation and tourism or specifically devoted to preservation in its natural state, the Department of Water Resources may give great consideration to the aesthetic and environmental ramifications of granting a permit which calls for substantive modification of the landscape or the stream. (707 P.2d at 450)

Further emphasizing the subjective nature of public interest considerations, the court determined that "what elements of the public interest are impacted, and what the public interest requires, is committed to the Department of Water Resources' sound discretion." (707 P.2d at 450)

The Department of Water Resources adopted rules in 1986 applying the court's public interest criteria. Several applications for water transfers have been denied based on those rules. Despite the court's guidance, the department acknowledges that it has been difficult when conducting hearings on transfer applications to define who the "public" is; to give adequate notice to affected interests that a hearing will be held and to efficiently manage a cumbersome hearing process; and to determine which party bears the burden of proof.[15]

There are state statutes, many of which apply to original appropriations rather than transfers to other uses, that define the public interest in terms similar to the Idaho court. Alaska's appropriation law often is cited as providing the most explicit criteria. It requires the commissioner of the Department of Natural Resources to consider:

(1) the benefit to the applicant resulting from the proposed appropriation;

(2) the effect of the economic activity resulting from the proposed appropriation;

(3) the effect on fish and game resources and on public recreational opportunities;

(4) the effect on public health;

(5) the effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation;

(6) harm to other persons resulting from the proposed appropriation;

(7) the intent and ability of the applicant to complete the appropriation; and

(8) the effect upon access to navigable or public water. (Alaska Stat., 46.15.080)

Nebraska likewise has a comprehensive definition of public interest criteria in its statute affecting interbasin transfers. The statement of legislative intent preceding the substantive provisions "recognizes the need to delineate factors for consideration by the Director of Water Resources when evaluating an application made pursuant to section 46-233 which involves an interbasin transfer of water in order to determine whether denial of such application is demanded by the public interest." (Neb. Rev. Stat., 46-289) The considerations include the following factors:

(1) The economic, environmental, and other benefits of the proposed interbasin transfer;

(2) Any adverse impacts of the proposed interbasin transfer and use;

(3) Any current beneficial uses being made of the unappropriated water in the basin of origin;

(4) Any reasonably foreseeable future beneficial uses of the water in the basin of origin;

(5) The economic, environmental, and other benefits of leaving the water in the basin of origin for current or future beneficial uses;

(6) Alternative sources of water supply available to the applicant; and

(7) Alternative sources of water available to the basin of origin for future beneficial uses.

California combines environmental criteria and economic considerations--neither of which provide clear direction to a regulatory agency because of a "reasonableness qualification"--in its water transfer statute. The Water Resources Control Board may only approve a transfer if it finds, in addition to nonimpairment, that the change can be made

"without unreasonably affecting fish, wildlife, or other instream uses and does not unreasonably affect the the overall economy of the area from which the water is being transferred." (Cal. Water Code, 386)

The economic considerations in California's statute, though offering little concrete guidance to a regulatory agency evaluating a proposed water transfer, increasingly are being incorporated into public interest reviews. University of Colorado economist Charles Howe notes several ways in which transfer of water out of agriculture can affect rural economies:

> (1) backward linkages occur when the reduction in crop acreage reduces demand for inputs, such as labor, machinery and fertilizer; (2) the reduction in crop outputs will reduce the availability of inputs to other production processes such as food processing and feedlots (these are called forward linkages); (3) the reduction in incomes in any sector will lead to reduced consumption demands for outputs from other sectors, thus creating a ripple effect throughout the economy, reducing income by more than the original decrease (these are called multiplier effects).[16]

Howe concludes that the impacts on rural areas of transfers of agricultural water outside the region "may be even larger if the recipients of the payments for the water do not reinvest their money in new activities in the region."[17]

Economic factors are a principal focus of the public interest review in Wyoming's water transfer statute. When considering a proposed change in use or place of use of a water right, the Board of Control is authorized to consider:

(i) The economic loss to the community and the state if the use from which the right is transferred is discontinued;

(ii) The extent to which such economic loss will be offset by the new use;

(iii) Whether other sources of water are available for the new use. (Wyo. Stat., 41-3-104)

The Wyoming Board of Control exercised its discretion in balancing economic impacts in a decision denying Pacific Power a permit to change the point of diversion of a water right. The board found that the change in place of use would cause serious economic effects in the county of origin, and questioned whether the benefits derived from power generation that might be shipped out of state could offset the losses to the county in which the original water was being exercised.[18]

The differences in statutory treatment of the public interest raises the question: does listing specific criteria define for a regulatory agency what the public interest is or does it more appropriately acknowledge that there is room for interpretation depending on changes in societal interests? University of New Mexico law professor Charles DuMars suggests that specific legislative criteria may not be as important as the rule-making process used by state agencies to implement legislative intent.[19] Legislation may be most helpful in defining what should not be considered in weighing the public interest; e.g., administrative issues such as which parties have legal standing to protest a transfer application and who bears the burden of proof.

Court Interpretations

In the absence of statutory guidance, state courts have made determinations regarding the application of public interest criteria. Different conclusions have been reached. A district water court judge in Colorado denied a motion to apply public interest criteria without legislative direction. On May 5, 1988, Judge Robert Brown ruled in proceedings on the city of Aurora's Collegiate Peaks project that he had no authority to consider public interest values within the existing constitutional and statutory setting for

adjudicating water rights (which, in essence, is limited to considerations of water availability and impacts on water rights).[20]

The objectors in the case, including the National Wildlife Federation and a coalition of West Slope water interests, based their challenge on three legal principles:

(1) because Colorado's constitution states that water is a public resource, the public interest should be considered in its appropriation;

(2) the doctrine of "maximum utilization" requires a balancing of potential environmental, economic, and social impacts against a project's benefits; and

(3) the public trust doctrine conditions the allocation of unappropriated water.[21]

Judge Brown concluded that the legislature "'is the appropriate branch of government to introduce, debate, and develop guidelines and standards'" regarding the application of public interest values. He also noted that a "'day of reckoning is approaching when the "public interests" raised by the opposers herein will have to be addressed in proceedings adjudicating water rights.'"[22]

The Utah Supreme Court reached a contrary conclusion in *Bonham v. Morgan*, 788 P.2d 497 (Utah 1989). At issue was a proposal to change the point of diversion and nature of use of a water right. The objector challenged the transfer on several grounds, including its potential environmental effects. The state engineer approved the application, determining that he lacked authority to consider public interest impacts in *transfer* proceedings. The court disagreed, and extended the public interest conditions applicable to *appropriation* permits to transfers as well.

Community Impacts: Beyond Environment and Economic Considerations

Public interest considerations may go beyond environmental and economic values. Helen Ingram, a political science professor at the University of Arizona, argues that water advances fundamental community values in rural areas of the arid Southwest. She identifies those as:

> Security, confidence that water will be available;
>
> Participation, a sense that local interest will be represented; and
>
> Opportunity, assurance that there will always be enough water for the community to realize its core values.[23]

Opportunity may be linked to economic benefits, but goes beyond financial considerations. Ingram's interviews with rural community leaders in the Southwest found concern over future economic development in an area of origin should water supply not be dependable; "'Businesses won't come into a community where there is no water, or where there's a question about how much water is available.'"[24] Beyond dollar considerations, Ingram discovered that certain water transfers may not be compensable:

> For a community to recieve money for its water would also seem to create opportunity, for money can be invested so as to provide a fair return that can be reinvested in projects that increase public welfare. Should water be needed for growth at some future time, economic reasoning suggests that a community or individual can simply purchase any readily available water. However, such reasoning is far from reflecting what leaders in areas-of-origin really think. Not only do these leaders doubt that money gained from water sales will stay in areas-of-origin, they question whether water will be available at a reasonable price when it is needed. Further, money is not so closely linked with perceptions of opportunity as is water. As one civic group

leader in La Paz County, Arizona commented: "I don't believe in compensation. I believe a community [must] develop its own potential--which you can't do with just money."[25]

Ingram's study of attitudes toward water transfers in Arizona, New Mexico, and western Texas found that leaders in both water exporting and importing basins questioned whether financial compenastion was sufficent to sustain rural communities. Only 35 percent of those interviewed in areas receiving transfers felt that water sales revenue strengthened the area of origin; only 17 percent in areas of origin concurred. Nearly 90 percent of rural community leaders stated that losses associated with water transfers were not compensable.[26]

PART THREE: WATER TRANSFER CASE STUDIES

The application of public interest criteria is presented in the case studies that follow. The actual impacts of water transfers on areas of origin, and the ways in which public interest criteria are incorporated into decisionmaking processes surrounding transfer applications, are reviewed. Four case studies have been selected:

(1) Arkansas River Valley, Colorado;

(2) La Paz County, Arizona;

(3) Northern New Mexico; and

(4) Eagle County, Colorado.

Arkansas River Valley, Colorado

The Arkansas River supports irrigated agriculture from the city of Pueblo on Colorado's Front Range east to the Kansas border. Farming has formed the basis of the valley's economy, especially in Crowley and Otero counties. Agriculture suffered economic losses during the 1930s' drought; water transfers out of the valley began in the 1950s. The general economic decline culminated in the permanent closure of Crowley County's sugar beet factory in 1967; water transfer activity subsequently escalated as farmers saw viable futures in farming diminish. It is important to stress at the outset that water transfers were not responsible for the *initial* economic malaise; the economy created the opportunities for the transfers to occur (i.e., willing sellers of water rights).

After the collapse of the sugar beet factory at Sugar City, the Crowley Land and Development Company (CLADCO) was formed to acquire local farms and the associated water rights. The majority of Crowley County farmers sold their land and water rights, which were held by the Twin Lakes Reservoir and Canal Company and the Colorado Canal Company. CLADCO subsequently sold its Twin Lakes shares to the city of Colorado Springs. The Board of Water Works of Pueblo, Pueblo West Metropolitan District, and

the city of Aurora purchased additional water rights. By 1980, the four urban entities owned 94 percent of Twin Lakes stock.[27]

The transfer scenario was similar for another water rights' holding entity--the Colorado Canal, a mutual irrigation ditch. As the result of sales of Colorado Canal stock from 1985 to 1988, Colorado Springs accounted for 56 percent of ownership and Aurora, 29 percent.[28]

Farmers holding water rights in Twin Lakes and the Colorado Canal chose to sell for a number of reasons. Kenneth Weber, an anthropologist formerly with the University of Colorado Institute of Behavioral Science, found that the principal rationale was to get out of debt: "Many saw the the sales of their water rights today under conditions somewhat under their control preferable to the potential of a sheriff's sale [due to bankruptcy] completely beyond their control tomorrow."[29] Sales of water rights enabled farmers to retain their land (even though it might no longer be suitable for farming absent irrigation), and the prices received for the water rights often were higher than the land values ever had been. Older farmers without children who wanted to remain in agriculture were more likely to sell than younger farmers or those with a generation that wanted to remain on the land.[30]

Although the massive sale of water rights may eventually spell the end of irrigated agriculture in a region, farming can remain viable in the short-term. Municipal buyers may not be able to put newly purchased water to use immediately because of delays in development projects or demands for water only in dry years. They may offer to lease it back on favorable terms to the original sellers or to other farmers seeking supplemental supplies to expand their operations.

Weber's study found that Crowley County farmers who divested themselves of their water rights chose to remain in the area. Eighty-nine percent of those farmers selling large shares of Twin Lakes water stock continued to reside in the county; the comparable figure for sellers of Colorado Canal water stock was 97 percent.[31]

Although continuing to live in the rural community, the sellers' revenue was not invested in Crowley County in a way that spurred the economy. Weber concluded that "continued local residency, lack of new business establishment creation, lack of unusual trade at auto agency or home remodelling establishments, and the reported high proportion of proceeds going to debt and taxes--all suggest that that the sale proceeds' economic impact on the economy was vastly less than the product of the number of shares sold multiplied by their selling price."[32]

Weber sees a difficult future for the county once those farmers who sold their water rights pass away. The likely effects may include:

- o a drop in the total amount of transfer payments to Crowley County;
- o the relatively high proportion of disposable income presently held by the elders will no longer be available to local merchants, service industries, or to the general tax base;
- o real estate values will decline as infirmity and death of the elderly bring more houses to the already depressed market; and
- o tax revenues will drop.[33]

The revenue consequences for the county could be especially damaging. Roughly 50,000 acres of land have been irrigated in the county; they have been relatively highly valued and taxed accordingly. With loss of irrigation water, the land will revert to grazing or wasteland and will have a much lower tax assessment. The effect of the tax

reclassification could reduce county tax revenue by 90 percent (unless remaining irrigated land is reassessed upward, shifting the tax burden to those deciding to remain in farming).[34]

Weber's study notes "the longer term prognosis for Crowley County in the absence of water sales would likely have been for continued economic and demographic decline although at a slower rate than experienced in the 1950s and 1960s."[35] He concludes that

> agriculture, although a declining industry, would likely have continued into Crowley's short term future absent the water sales and transfer. Granted, some of the land may have gone from production and some of the less successful or more heavily indebted farmers may have been forced out but, with the water, agriculture would have remained possible. Whether it would have been economically feasible depends on many variables beyond the control of the local population. . . . Without the water, however, the land's economic potential is drastically reduced if not virtually eliminated.[36]

The water transfer scenario is similar for neighboring Otero County. In 1980, Resource Investment Group, Ltd. (RIG), purchased 58 percent of the shares in the Rocky Ford Ditch Company. RIG sold its water rights--calculated at 8,200 acre-feet per year--in 1987 to the city of Aurora for $25.5 million. That volume of water had irrigated 4,100 acres of cropland. Aurora proposed to retire the land and transfer the water to meet urban growth demands.[37]

It is interesting to note the lack of local government opposition to the proposal. Kevin Pratt, an attorney representing the Southeastern Colorado Water Conservancy District which did protest the transfer, points out that

> neither the town [Rocky Ford] nor the county [Otero] objected to the transfer. No demands for mitigating tax payments, gradual phase-out of farming operations, "last use" of the water by Aurora or first right of refusal for leases to local water users were asserted. Neither the city nor the county attempted zoning or permitting regulations under their police powers with respect to the transfer.[38]

As was the case in the Crowley County water transactions, the court imposed conditions on the transfer to ensure that existing water rights would not be impaired. Other stipulations were the result of negotiations between Aurora and the transfer's opponents that the court affirmed. The most significant condition was a revegetation requirement to prevent soil erosion and proliferation of noxious weeds accompanying the drying up of formerly irrigated land. Resource Investment Group, Ltd., began planting grass cover in 1988. Aurora determined that RIG's efforts would fail and, as the party whose transfer was contingent on a successful revegetation program, took responsibility in 1989. RIG and Aurora were subsequently held in contempt of court for failing to complete the revegetation program within one year and were fined $2,000 each.[39]

Aurora has spent $4.3 million--or nearly 10 percent of the $46.5 million total purchase price for the Rocky Ford and Colorado Canal water rights--on revegetation.[40] The city maintains a full-time office in Crowley County to oversee the program. One of the difficulties the city will face in complying with the conditions regarding the Colorado Canal transfer is that the revegetation goal is "not so much . . . reestablishment of native species but rather of an economically viable dry land forage crop."[41]

The court-imposed conditions derived from *negotiations* between the party proposing the transfer--the city of Aurora--and the objectors--principally the Rocky Ford

Ditch Company and the Southeastern Colorado Water Conservancy District. The court, in essence, merely ratified a voluntary agreement reached between the parties. The public interest considerations incorporated into the court decree were not required by statute; legislation did not provide the court with any guidance or direction aside from precluding impairment of water rights. Tommy Thompson, the district's general manager, notes that "'in other court settlements and agreements, when water was sold there was nothing to protect those people.'"[42] If the revegetation effort is successful, Thompson foresees "an environmentally improved landscape, with native grasses and return of wildlife, as well as an economy based on ranching in the area."[43]

La Paz County, Arizona

While legislation designed to encourage the reallocation of water in California has failed to generate any large-scale market activity, Arizona's 1980 Groundwater Management Act has promoted water movement by severing groundwater rights from the overlying land and placing a cap on agricultural water use. The statute created three types of grandfathered water rights:

(1) irrigation rights which may be converted to other uses;

(2) type I nonirrigation rights whose water, although appurtenant to the overlying land, may be transferred (the well must remain on the original land); and

(3) type II nonirrigation rights which are severable from the land (the well location may change).[44]

While permitting a change from irrigation to nonirrigation uses, the agricultural cap precludes the reversion of the water right to irrigation. Additionally, the conversion of an irrigation right to a type I nonirrigation right requires retirement of the irrigated land. Because the entire right is conveyed with the transfer of land title and may not be split up

into more than one right, the transfer of an irrigation right means the end of farming on the land in most instances.[45]

The act also requires a municipality to demonstrate that there is sufficient water available (assured water supply) to service growth before subdividing land within an active management area (AMA). The new source of supply cannot be mined groundwater--withdrawals in excess of recharge--within the AMA. Municipalities are looking to purchase and transfer water from agricultural land in the absence of significant water conservation.[46]

Representatives from rural areas argue that the effect of many water transfers is to substitute mined groundwater from areas outside an AMA for mined groundwater that municipalities are precluded from using within the AMA. A nonrenewable resource is depleted; the only difference is location. In those rural areas without access to alternative surface water supplies, groundwater transfers translate into lost economic development potential.[47]

The acquisition of agricultural land to obtain the appurtenant groundwater rights--referred to as "water farming"--that occurred subsequent to the act's passage and through about 1984, did not engender the type of rural oppostion that has been witnessed in recent years. The reasons cited are:

(1) the area of origin was relatively near the area of use;

(2) the water was in the same hydrologic basin, although in different sub-basins;

(3) the land was in the same county, so that most property tax impacts were internalized; and

(4) the cities incorporated the purchased land into their service areas, assuring an adequate water supply for the areas of origin.[48]

Eighteen completed or pending water farm purchases in Arizona have been identified through May 1990. Most of them are in La Paz County (where over one-half the county's land has been purchased as water farms). Researchers at the University of Arizona note that the "typical transaction is a $15 million purchase of land providing 15,000 acre-feet per year, based on a 100-year pumping regime for groundwater.[49] Because of the need for a conveyance faility to transfer water, most of the acquisitions have been near the Central Arizona Project (CAP) aqueduct (which the purchasors assume will be available to wheel their water). The geographic location of the CAP faciltiy "has had the additional effect of concentrating any adverse effects associated with water farms in one part of the state."[50]

The parties seeking water transfers have spent over $300 million to aquire 500,000 acres of rural land for their water rights (nearly 500,000 acre-feet per year). The acreage has included irrigated farmland that eventually will be retired, and desert land overlying untapped aquifers. The transfers have been of land title only; no water has yet been moved.[51] The impacts on rural areas have been fiscal to date--tax and revenue losses (there have been no environmental effects as in Colorado's Arkansas River Valley).

Despite the absence of actual water transfers, there have been fiscal repercussions from the *land sales*. The Arizona Constitution exempts municipally owned land from county taxation; La Paz County, therefore, is precluded from continuing to tax formerly irrigated land purchased by the city of Phoenix. The county's tax base decreases, which affects its ability to issue bonds backed by general fund revenue.

Shifting to the potential economic impacts associated with the *transfer of water*, a September 1989 study by economic and policy analysts at the University of Arizona calcualted that La Paz County would lose 17 employees for each 1,000 acres of farmland retired.

> Of these, 10.5 are direct or indirect impacts and 6.5 are income or population induced. Of the 10.5 direct and indirect jobs, 65 percent are in farming and 16 percent are in agricultural services.[52]

The same study projected the loss in La Paz County personal income at $363,000, with 75 percent of that figure attributable to direct and indirect impacts. Assuming 20,000 acres of irrigated land is eventually retired, the employment loss would be 340 jobs (or nearly 7 percent of the county's 1987 work force); the reduction in personal income would represent a 4.5 percent loss. Including the reduction in property tax base, the University of Arizona researchers estimated a total loss in revenue for La Paz County government of just over 3 percent from the retirement of 20,000 acres of farmland.[53]

The Arizona Legislature has considered several measures in recent years to try to incorporate public interest criteria into water transactions. Until the 1991 session, the most comprehensive package of proposals came before the 1989 session as House Bill 2666. The major provisions included:

(1) placing one-half of the state's land into "closed basins" from which groundwater could *not* be transferred to active management areas;

(2) designating other areas as "reserved basins" from which up to 65 percent of the groundwater could be transferred;

(3) limiting to 4 acre-feet/acre the volume of water that could be transferred from irrigated land in reserved basins to AMAs, and 3 acre-feet/acre from desert land;

(4) requiring financial compensation to basins of origin in the form of a $5/acre of land payment in the first year of water export to an AMA, and $7/acre-foot of actual water transferred (to be used for economic development in the county); and

(5) mandating municipal payments in lieu of taxes to counties from which water is transferred to soften the economic impacts.[54]

The legislation passed the House but failed to get out of Senate committee. Strong rural opposition led to its defeat (although five of the seven no votes in Senate committee came from legislators representing urban districts). Representative Herb Guenther from La Paz County, who has been involved in negotiations on proposed water transfers since their inception, had reservations on several points. His principal concerns were:

(1) the 65 percent level for permissible groundwater exports from reserved basins was too high (he supported a figure of no more than 50 percent);

(2) two-thirds of the reserved basins from which groundwater could be transferred were in a single county--La Paz--which shifted too much of the export burden onto one area of the state;

(3) the water transfer fee--$7/acre-foot--was too low; it represented only 1.4 percent of the nominal value of water compared to 2.5 percent for fees on other nonrenewable resources in the state (the assumption being that transferred groundwater is, in essence, "mined");

(4) water farms were not reclassified as commercial property for tax assessment purposes (in Colorado's Arkansas River Valley, there is concern that retired farmland will be downgraded to a grazing classsification, thus reducing revenue-raising potential); and

(5) local governments were given no involvement in the water transfer approval process.[55]

Shortly after the November 1990 elections, Representative Guenther suggested that the 1991 legislative approach to protecting areas of origin might be to shift the focus away from water transfers per se and toward statewide water management. The strategy could include consideration of water replenishment districts in active management areas, whereby a central district agency would operate a water bank that would pool the AMA's water supplies for use by municipalities as needed. That approach could reduce the need for groundwater transfers from agricultural land--"water farms would no longer be used as a tool for competitive growth among municipalities in active management areas."[56] The water replenishment district concept, and proposals aimed specifically at protecting rural communities from water transfer impacts that have been introduced in the 1991 Arizona legislative session, are discussed in Part Four of this report.

Northern New Mexico

The issues raised in the case of *Sleeper v. Ensenada Land and Water Association*, No. RA 84-53(C), slip. op. (N.M. Dist. Ct., April 16, 1985), illustrate the potential for consideration of community values in water transfer applications. The initial court ruling, subsequently overturned on grounds unrelated to public interest questions, squarely addressed the dichotomy between economic benefits and difficult-to-quantify rural community values. The judge came down on the side of protecting his interpretation of what constitutes the public interest.

The case involved the acquisition of farmland near Ensenada, New Mexico, to obtain the appurtenant water rights for subsequent transfer to a nonagricultural use (a ski resort). The effect of the proposed transfer was to retire formerly irrigated land (65 acres on a temporary basis, 14 acres permanently). The transfer application was filed with the state engineer in 1982 (prior to enactment of New Mexico's "public welfare" statute). The

Ensenada Land and Water Association objected to the application, alleging that the transer would impair existing water rights and would be contrary to the public interest. The state engineer found no impairment of water rights and approved the transfer.[57]

Ensenada appealed the state engineer's decision to district court, contending that the transfer would not be in the public interest because it would result in a permanent loss of farmland and greater financial obligations associated with ditch maintenance costs being born by fewer irrigators. Tierra Grande, the project developer, argued that the diversion would enhance economic development in the community because the resort would create additional tourism industry related jobs.[58]

Judge Art Encinias overturned the state engineer's ruling. He determined that the community values tied to the use of water for agriculture were of higher priority than the economic values attributable to recreational development. Judge Encinias concluded that

> it is simply assumed by the applicants that greater economic benefits are more desirable than the preservation of a cultural identity. This is clearly not so.
>
> Northern New Mexicans possess a fierce pride over their history, traditions and culture. This region of northern New Mexico and its living culture are recognized at the state and federal levels as possessing significant cultural value, not measurable in dollars and cents. The deep-felt and tradition-bound ties of northern New Mexico families to the land and water are central to the maintenance of that culture.
>
> I am persuaded that to transfer water rights, devoted for more than a century to agricultural purposes, in order to conduct a playground for those who can pay is a poor trade, indeed.[59]

The New Mexico Court of Appeals overturned Judge Encinias' decision. The appellate court found that public interest criteria were not pertinent because the statutory law in effect at the time of the application did not provide for public interest (or public welfare) considerations. Absent statutory authorization, and finding that existing rights would not be impaired, the lower court ruling was reversed.[60]

Despite the resolution in the *Sleeper* case, the Rio Arriba County Commission adopted land use regulations in 1986 prohibiting the subdivision of irrigated land, and requiring upfront guarantees of water rights for future developments (which would probably require transfers from agriculture, which would then be subject to the public welfare review contained in the 1985 statute). The commission noted that

> it is the purpose of these regulations to protect the unique culture which has developed within Rio Arriba County by ensuring that all subdivisions are created in harmony with this culture, and contribute positively to it rather than detract from it. . . . transfer of water rights from traditional uses to residential subdivision or commercial uses, will generally not promote the public welfare.[61]

The *Sleeper* case and Rio Arriba's land use regulations raise broader issues of appropriate state policy options capable of balancing public interest values and beneficial uses of water. University of New Mexico Law Professor Charles DuMars argues that "the issue is not what variables should go in to the calculus, rather, it is the capacity of the *forum* to do the weighing of these values [emphasis added]."[62] DuMars concludes that the traditional administrative and judicial means of determining water rights are inadequate for considering the public interest. The regional water planning process established by the New Mexico Legislature as an option to integrate public interest criteria into water allocation decisions is discussed in Part Four of this report.

Eagle County, Colorado

The conflict in the Eagle County, Colorado, case study is over the potential environmental effects in the basin of origin of constructing a diversion facility to transport water to Front Range municipalities. The issue is not tied to the transfer of a water right from agriculture to another use. The objectors do not argue that the municipalities proposing the transfer lack the legal authority to exercise their water right; they contend, instead, that the means of conveying the water must comply with measures designed to protect the exporting basin from adverse environmental impacts. The case study describes how land use regulations are incorporating public interest considerations into a water allocation decisionmaking process.

Legislation passed in Colorado in 1974--House Bill 1041--empowers local governments to regulate activities determined to be of statewide interest that impact the local jurisdiction. The statute specifically enables local governments to "designate matters of state interest after public hearing, taking into consideration : (I) The intensity of current and foreseeable development pressures; and (II) Applicable guidelines for designation issued by the applicable state agencies." (Colo. Rev. Stat., 24-65.1-301(1)(a))

Once designated, a local government may "grant or deny applications for permits for development in areas of state interest and for activities of state interest." (Colo. Rev. Stat., 24-65.1-301(1)(c)) The legislation further authorizes a local government to:

> approve an application for a permit to conduct an activity of state interest if the proposed activity complies with the local government's regulations and guidelines for conduct of such activity. If the proposed activity does not comply with the guidelines and regulations, the permit shall be denied. (Colo. Rev. Stat., 24-65.1-501(4))

The "1041" process became an issue with regard to conditioning interbasin transfers in 1988 when the Colorado Court of Appeals affirmed the right of local governments to regulate water diversion facilities. The city of Denver challenged the authority of Eagle and Grand counties to issue permits for three of its proposed diversion projects. Denver argued that the effect of the local regualtions was to deny the city its constitutional right to appropriate water. The court countered that the "building of Denver's water projects in Eagle and Grand counties may have a substantial impact on the environment and may greatly affect the health, welfare and safety of Colorado citizens far removed from the city [which would define the projects as being of state interest]." (*City and County of Denver v. Board of County Commissioners of Grand County, et al.*, 760 P.2d 656 (Colo. App. 1988) On appeal, the state supreme court upheld the decision. (*City and County of Denver v. Board of County Commissioners of Grand County, et al.*, 782 P.2d 753 (Colo. 1989)).

The local government permit authority has been exercised by Eagle County, but not in regard to Denver's projects. In February 1988, the county commissioners voted unanimously to deny permits for the construction of the Homestake II project proposed by the cities of Aurora and Colorado Springs.[63] The size of the project (which would divert 21,000 acre-feet per year from the Holy Cross Wilderness to the Front Range) made it subject to considerable review.

Barbara Green, an attorney representing Eagle County in the proceedings, acknowledges that the "1041" process is not intended to regulate water rights, only construction projects associated with a water right (had the proposal not involved a land use development, it probably would not have come under local jurisdiction). She argues, however, that the "water rights issue has been used as a shield to immunize developers from the land use permit process."[64] She suggests further that if water is considered to be

a property right, right holders should be subject to the same permit review process as other property right holders proposing a development (local land use regulations were in place prior to the Homestake II application). Green concludes that Colorado's local land use regulation statute "allows the unit of government traditionally responsible for land use planning, economic and environmental impact assessment and development review to evaluate and regulate impacts *not properly before the water court* [emphasis added]."[65] (As in the New Mexico case study, the issue of appropriate *forum* is raised.)

The public interest criteria reflected in the county commisioners' permit decision include:

(1) Applicant has failed to show that the proposed development will not significantly deteriorate aquatic habitats.

(2) There will be significant deterioration in public outdoor recreational areas because of loss in the quality and quantity of the river rafting experience and construction disturbances in a wilderness area.

(3) Reduction in stream flows and construction activities in a wilderness area will result in significant degradation of natural scenic characteristics.

(4) The benefits of the proposed development do not outweigh the losses of natural resources.

(5) There will be an adverse effect on water rights because water quality is a protected element of a water right and there will be a reduction in downstream water quality.[66]

Mark Pifher, an attorney representing Aurora and Colorado Springs, questions the wisdom of allowing local governments to determine what constitutes a state interest. He argues that the statute is open to inconsistencies between counties regulating the same or

similar projects; political pressures on local decisionmakers; and competing local priorities.[67] He further contends that the effect of Eagle County's permit denial is to regulate the exercise of a water right, a function reserved to the courts and the state engineer.[68] (A court decision is pending as to whether the county's permit denial constitutes a taking of property without just compensation.)

Like University of New Mexico Law Professor Charles DuMars, Eagle County's attorney Barbara Green does not think that public interest considerations can be addressed appropriately in the water courts. She also supports the development of regional water planning processes that would identify values attributable to water within the basin. Negotiated settlements in lieu of adversarial proceedings are one component of such a policy option. Green contends that the Homestake project could have been sited if negotiations had occurred upfront between Aurora and Eagle County.

PART FOUR: LEGISLATIVE POLICY OPTIONS

Public interest considerations have usually been incorporated into the water transfer process through negotiations involved with adversarial proceedings. The court-imposed conditions in the Arkansas River transfer illustrate this point. Southeastern Colorado Water Conservancy District attorney Kevin Pratt contends that

> litigation is used in transfer cases to create the leverage that facilitates a settlement. An objector to a transfer believes the transfer adversely impacts his private interest or violates his perception of the public interest. Current [Colorado] law encompasses concepts of injury broad enough to protect a broad range of private and public interests. By extending current doctrines and demanding strict proof by transfer proponents, many water transfers can be reformed to satisfy all parties. While some commentators assert that the traditional water law non-injury standard does not allow adequate protection from injury to the interest they want to protect, the Rocky Ford transfer case demonstrates the opportunity in existing water transfer procedures to inhibit and modify transfers for the purpose of protecting a broad range of interests.[69]

In supporting area-of-origin protection legislation before the Colorado Senate Committee on Agriculture, Natural Resources and Energy during the 1991 session (Senate Bill 4), Senator Harold McCormick, the bill's sponsor, argued that it was not good public policy to abdicate to the judgement of individual courts the determination of public interest; he felt it was incumbent on the legislature to provide the courts with clear direction.[70] (Senate Bill 4, as amended, would have empowered the courts to require revegetation of retired farmland and financial compensation for any reduction in the local tax base in the area of origin impacted by a proposed water transfer; it failed to get out of committee on a 5-4 vote.)

There are three sets of options that a legislature may consider to incorporate public interest criteria into water transactions. They are not mutually exclusive and, as a package, can provide an administrative agency with flexibility in balancing competing public interests vying for scarce water during both a rule-making process or factual consideration of a transfer application. The first would determine public interest values and the manner in which they would be applied; it would include the establishment of water planning processes to balance contending interests. The second would condition water transfers to protect the public interest; it would emphasize mitigation measures to compensate for impacts. The final set would utilize the market to provide incentives to conserve water that would subsequently be made available for transfer; water moved accordingly would not affect its continued use in the basin of origin.

Defining and Applying the Public Interest

Ensuring that public interest values are considered in a water transfer requires a determination of applicable criteria, a process capable of factoring them into a decision, and means of mitigating any adverse impacts. Defining the public interest may be accomplished by specifying criteria in statute or by leaving it up to a regulatory agency or water court to determine what factors are appropriate (citations from statutory and case law were presented in Part Two of this report).

Absent specific statutory guidance as to what constitutes the public interest, the legislature may consider placing the burden of assessing potential impacts in the area of origin on the transfer applicant. In its original form, Colorado's 1991 proposed Senate Bill 4 would have required "any party applying for a change in a water right which will cause water to be removed from any irrigated area" to submit to the water court with jurisdiction over the filing "an assessment of the environmental and economic consequences of

changing such a right." The environmental assessment would have included "an evaluation of any adverse changes which may occur in the soil, geography, and habitat of a given area if water is removed." The economic assessment would have addressed "the loss in assessed valuation of land after water is removed and the effect of such loss on county and other local government services such as police protection, fire protection, and public schools."

Senate Bill 4 was recommended for consideration by an interim legislative study committee that met following the 1990 session. Although the concept of basin-of-origin protection received support in testimony before the committee, the comments of one West Slope county commissioner suggest the need for a broader approach than contained in the original bill:

> The problem is that basin of origin legislation is typically seen as some form of compensation rather than a piece of a much bigger resource management picture. We are afraid that a compensation-oriented basin of origin bill is premature in the absence of a comprehensive, problem-solving approach to water management. . . . In order to find a solution to these problems, basin of origin included, there needs to be a collaborative, consensus based process that recognizes the integrated nature of the problem. [71]

The approach ultimately presented in the interim committee's bill went beyond mitigation and included components similar to those contained in many state environmental policy acts, whereby the applicant is required to prepare the equivalent of an environmental impact statement. University of New Mexico law professor Charles DuMars acknowledges that this approach is "attractive . . . [and] might be helpful but probably would not go far enough . . . because it would provide no decision rule: it is one thing to display impacts and quite another to decide that one or another impact justifies scrubbing a project."[72]

DuMars has a similar concern with using a water court or administrative agency as the sole forum in which to balance competing public interest criteria. Among his reasons:

> At the administrative level, the typical decision maker is a person trained in engineering or some other technical area and lacks the staff to help him/her make a decision on subject matter of this kind. At the judicial review level, the judge, while perhaps able to perceive the overall policy issues, is constrained by his attempts to arrive at a "holding" on what is essentially a philosophical-political debate.[73]

DuMars' recommended approach entails the establishment of regional water planning processes wherein local communities would identify public interest values attributable to water in the area of origin and convey those findings to the regulatory agency or water court responsible for reviewing water transfer applications. The legislature, by defining which parties have "standing" to comment on public interest determinations, could include potential water transfer proponents in the regional planning processes. The planning documents that emerge would be advisory in nature and would provide the decisionmaker with the breadth of information necessary to appropriately balance contending public interest factors.[74]

This type of regional water planning process was incorporated into New Mexico legislation enacted in 1987 (Chapter 182, House Bill 337; attached as Appendix). The act authorizes the Interstate Stream Commission to make grants or loans to regional water planning entities to formulate regional water plans. Such an entity is defined as "an area within the state that contains sufficient hydrological and political interests in common to make water planning feasible." As a condition for financial assistance, a planning proposal must contain "adequate review of water conservation and the effect on the public welfare."

Fifteen regional planning entities have received grants from the Interstate Stream Commission totalling roughly $1 million. The commission anticipates that the entire state will be covered with regional planning processes within the next two years. Three regional plans have been completed; an additional six should be prepared by the end of 1991.[75]

The planning documents ultimately will be submitted to the state engineer. They are not considered to be binding on the state engineer when he considers proposed water transfers out of a region. They are designed to assist him in understanding the values each region ascribes to water and what the projected future water needs in each region might be. The state engineer will use the planning documents as the basis for conducting public hearings on water values and water uses within each region and to define what constitutes the public welfare through the rule-making process.

Another regional water planning approach that legislatures may want to consider is that in Montana, established in 1987 by the Department of Natural Resources and Conservation (DNRC). Unlike New Mexico, Montana's process is initiated by the state and is designed to address specific issues in water basins. DNRC provides the organizational framework for reaching local consensus in resolving a particular problem. The department's intent is to have communities determine their water future.

The formation of a basin advisory committee consisting of affected water users and interests appointed by the governor is the institutional structure for promoting consensus on regional water plan development. The Milk River Basin Advisory Committee is the only one that has been formed to date. It was established to decide how to resolve water shortages among eight irrigation districts, three Indian reservations, a national wildlife refuge, and a town. The regional committee has met four times to date. Its eventual

planning document will be submitted to DNRC for approval and become incorporated into the state water plan.[76]

Another approach to regional water planning that shifts the focus away from water transfers per se is the formation of water replenishment or augmentation districts in areas that have sought transfers out of agriculture to meet their water needs. Arizona State Representative Herb Guenther has alluded to this option as one that might get municipal and private water interests out of competitive grabs for water farms. University of Arizona economic and policy analysts Gary Woodard and Cara McCarthy concur, suggesting that "having a regional or statewide agency in the business of procuring supplies would minimize the number of players in the game, thereby minimizing the rush to buy farms to acquire water supplies that may never be needed."[77] They list the advantages of using such districts as:

> resolving regional conflicts in purchase and delivery of new supplies; developing cooperative projects, such as conveyance mechanisms, with greater economies of scale; promoting the use of renewable supplies rather than mined groundwater; and managing water farms or other water rights owned by participants. In addition, having one entity holding a portfolio of water rights for an entire metropolitan area allows spreading of risks and pursuing certain supply options on a state-wide basis that may be presently unattainable by individual water users . . . .[78]

Legislation establishing a water augmentation district in the Tucson Active Management Area was enacted in 1990 (Senate Bill 1556); the district's operations are to be financed through a groundwater withdrawal fee of up to $2/acre-foot. A proposed district for the Phoenix AMA was discussed by a joint interim legislative study committee following the 1990 session. It would authorize such a district to "'acquire, transport, hold,

exchange or deliver water, except groundwater within the district . . . [and] acquire, hold, retire or dispose of water rights located outside the district . . . ."[79]

The replenishment district concept has received support in principle from rural interests who feel that it might shift the emphasis in water supplies away from water farms.[80] Conditions limiting water transfers outside of AMAs, however, would have to be attached. Rodney Smith, an economist whose book *Trading Water: An Economic and Legal Framework for Water Marketing* focused on Arizona water law and market activity, has suggested that Phoenix may be willing to accept transfer conditions as a tradeoff for a solution that replaces mandatory conservation with water augmentation to achieve safe yield.[81]

Water augmentation legislation initially was considered in Arizona's 1991 session as an amendment to Senate Bill 1055, a water transfer measure similar in concept--but not in specific provisions--to legislation that failed to pass at the end of the 1989 session (HB 2666) . As originally introduced, SB 1055 would establish three "reserved basins" from which water could be transferred, and limit to 40 percent the amount of groundwater that could be exported. The bill would set specific criteria to be evaluated by the director of the Department of Water Resources in reviewing a transfer application, and establish an ad hoc committee that would include urban and rural members to advise the director in each transfer case. Financial compensation on a per-acre of land and per-acre-foot of water basis would be provided to offset potential impacts in the county of origin.[82] The water augmentation amendment has been stricken from SB 1055 in the House and reintroduced as House Bill 2499. (At the beginning of May 1991, the transfer and replenishment district concepts were being considered on separate tracks.)

Mitigation of Transfer Impacts

Because western water law generally treats the resource as a property right, the emphasis in transfer proceedings has been to *condition* a transfer--not to prevent it from taking place--by mitigating potential impacts. Mitigation may take several forms; the proposed amendments to Colorado's 1991 Senate Bill 4 would have required revegetation of retired farmland and financial compensation to local governments for reduced property tax bases. Existing law in Colorado provides a form of mitigation referred to as compensatory storage. Water districts proposing to transfer water out of the Colorado River Basin must design, construct and operate any diversion projects

> in such manner that the present appropriations of water, and in addition thereto prospective uses of water for irrigation and other beneficial consumptive use purposes, including consumptive uses for domestic, mining, and industrial purposes, within the natural basin of the Colorado River in the state of Colorado, from which water is exported, will not be impaired nor increased in cost at the expense of water users within the natural basin. The facilities and other means for the accomplishment of said purpose shall be incorporated in and made a part of any project plans for the exportation of water from said natural basin in Colorado. (Colo. Rev. Stat., 37-45-118(b)(IV))

The statute applies, however, only to water districts transferring water out of one basin; it does not affect proposed municipal transfers out of other areas of origin.

Compensatory storage has been a mitigation option utilized by water districts diverting Colorado River water to the Front Range. The Colorado-Big Thompson Project (CBT) in northeastern Colorado has dedicated 100,000 acre-feet of water in the Green Mountain Reservoir on the West Slope for use in the basin of origin. The compensatory

storage agreement calls for releases of water in other CBT West Slope reservoirs to maintain instream flows for fishing and aesthetic purposes.[84]

A limited attempt was made--but defeated--in 1988 to amend the statute through House Bill 1151. The proposed legislation would have required any entity transferring "base water" out of a water conservancy district to "implement a plan for the protection of beneficial uses of water within the conservancy district . . . [which] shall provide within the conservancy district the same degree of protection as was provided by the district to the natural basin of the Colorado River through subparagraph (IV) of this paragraph (b) [of Colo. Rev. Stat., 37-45-118]."

Broader approaches at extending mitigation in Colorado were likewise defeated during the 1990 session. House Bill 1210 would have required an applicant proposing to transfer water from any basin in Colorado "to prevent or mitigate the harmful effects" and "to compensate to a reasonable degree the compensation area for any unmitigated adverse economic and environmental impacts in a manner and in an amount determined by the water court." The bill defined compensation to include

(a) Aquisition of water rights. . . ;

(b) Fish and wildlife enhancement . . . ;

(c) Improvement of river-based recreation opportunities . . . ;

(d) Provision of alternative supplies of water to meet the future needs of the basin of origin . . . ; and

(e) Construction or expansion of water and sewage treatment facilities."

The bill also would have required the use of the Colorado joint review process--which provides a hearing forum in communities potentially affected by natural resources developments--to assist the water court in determining appropriate compensation.

Financial compensation to redress potential damages in the area of origin is an approach common to many legislative mitigation proposals. Financial losses associated with water transfers may include reduced property tax bases from land taken out of production and increased costs for water and sewer facilities necessary to deal with reduced stream flows. Financial compensation could be placed in a trust fund to mitigate damages incurred over time. It would be financed by assessments on a dollar per volume of water transferred (where land is purchased and retired to obtain the appurtenant water rights, an additional one-time charge based on land acreage also may be assessed). University of Colorado law professor Larry MacDonnell notes that

> one attraction of this approach is that it avoids the need for speculative assessments of the possible adverse social and economic effects of a transfer. At the same time it provides a source of funds for needed mitigation. The availability of such a fund may also be important since the effects of transfers are likely to be more significant cumulatively than individually.[85]

Compensation proposals have been most thoroughly developed in Arizona and have been a prominent part of water transfer legislation. Three forms of compensation have been considered:

> a one-time "dedication fee" to be paid to the county of origin when groundwater is dedicated for use in another county; a per acre "in ground fee" to be paid at the time water farm acreage is retired from agriculture; and a per acre-foot "transportation fee" to be paid when groundwater is actually removed from the county. The transportation fee would be deposited in a "county economic development fund" to be used to enhance planning, business recruitment and retention, and other related activities.[86]

Compensation may also be appropriate for the party transferring water when conditions are subsequently placed on the exercise of a water right to protect the public interest or, more accurately, fulfill the state's "public trust" obligations. The public trust doctrine, as enunciated in the 1983 California Supreme Court case *National Audubon Society v. Superior Court*, 658 P.2d 709, requires states to balance the benefits achieved through water appropriation with the impacts on values such as environmental protection, recreation, and fisheries. In many respects it establishes a retrospective policy framework for water transfers by making it incumbent on a state regulatory agency to reconsider past water decisions in light of changing water values. Harrison Dunning, a law professor at the University of California at Davis and public trust doctrine authority, concludes that

> what the Mono Lake [*National Audubon*] decision provided was approval of a theory: that the ancient public trust doctrine may in the proper circumstances serve to limit how much water may be diverted pursuant to an appropriative right. Los Angeles [which was diverting water from Mono Lake tributaries] was not ordered to give up anything. Instead, it was put on notice that the environmentalist challenge could proceed and that the many obvious questions would have to be resolved later on. These include factual determinations as to the extent, if any, to which the city's diversions are causing or will cause harm to the public trust uses of Mono Lake; the methodology for integrating legitimate claims for protection pursuant to the public trust doctrine with equally legitimate claims to use water pursuant to the appropriation doctrine; whether diminution of use of water by an appropriator can in any public trust circumstance constitute a taking of property for which just compensation is owed; and, if so, the appropriate taking analysis to apply.[86]

The California Legislature has authorized compensation to the city of Los Angeles for the effects of state orders to reduce diversions from Mono Lake tributaries to protect public trust values. Assembly Bill 444 and Assembly Bill 1442, both enacted in 1989, established an Environmental Water Fund which is anticipated to receive deposits of more than $60 million from State Water Project water sales during the 1990s for projects with significant environmental benefits. A portion of the fund may be used to provide alternative sources of water to Los Angeles to offset its losses of Mono Lake diversions. Replacement projects may include implementing water conservation measures, enlarging storage and delivery systems, and expanding water marketing options.[87]

Incentives to Conserve Water

The doctrine of prior appropriation requires water to be put to "beneficial use" (which is variously defined in western water codes); water that cannot be put to beneficial use must return to its source for use by the next senior water right holder. The doctrine assumes that "waste" will not occur because nonessential water will be made available for additional appropriation. The beneficial use requirement may promote inefficient water use, however, because a water right holder is unlikely to acknowledge that any water withdrawn is unnecessary to fulfill his needs for fear of losing the right. As a result, there is little incentive to conserve water (unless, for example, the conserved water can be used to irrigate additional acreage on the same property).

Allowing the transfer of conserved water may satisfy some alternative uses without diminishing scarce water supplies and adversely affecting basins of origin. Because 80 percent to 90 percent of the water consumed in the western states is held by agricultural water rights, the farming community will be the target of most conservation-transfer proposals. When combined with water conservation efforts in urban areas, the transfer of conserved agricultural water is often viewed as a means to supplement municipal water

supplies. Absent incentives to conserve water and transfer it to other users, farmers are faced with an all-or-nothing proposition--keep using the water as before or give up farming altogether by selling the water rights. Zack Willey, an economist with the Environmental Defense Fund, has found interest among farmers for negotiated conservation/transfer agreements. He cites four reasons:

> First, trading water for financing of irrigation system improvements would increase the value of agricultural lands as well as irrigators' ability to control the application of water to crops, which could enhance yields. Second, regulatory uncertainties concerning the status and amount of water rights which irrigators will hold in the future can be alleviated by improving irrigation systems with the financial assistance of water purchasers. Third, irrigation system improvements can reduce irrigators' liabilities stemming from pollution drainage and runoff. Finally, some interest in water sales was expressed for reasons unrelated to water policy, including enhanced income and ability to retire debt from the proceeds of water sales.[88]

California and Oregon have enacted legislation authorizing the transfer of conserved water. California's 1982 legislation (Cal. Water Code, 1010-1011) authorizes conserved water to be "sold, leased, exchanged, or otherwise transferred pursuant to any provision of law relating to the transfer of water or water rights, including but not limited to, provisions of law governing any change in point of diversion, place of use, and purpose of use due to the transfer." The statute ensures protection of exiting water rights by requiring compliance with provisions of law regulating changes in water uses generally.

Despite the legislature's action, there has been virtually no water transfer activity attributable to the law. The reasons include (1) the need for water district approval of transfers outside a district's boundaries (most of California's water rights are held by

districts of some sort); and (2) the statutory requirement that transferred water be "surplus" to a district's needs (unused surface water is increasingly being reallocated for groundwater recharge).[89]

Oregon's 1987 legislation (Ore. Rev. Stat., 537.455 et seq.) stipulates water transfer criteria in the statute. It requires a right holder intending to conserve water for transfer to submit a conservation plan to the Water Resources Commission (WRC) for approval. Once the plan is approved, the conserved water is assigned a priority date comparable to the original water right. The legislation states that conserved water remaining in a stream is not considered abandoned. Transfers outside a water district's boundaries require district approval. The statute also incorporates strong instream flow protections by empowering WRC to dedicate up to 25 percent of the conserved water contained in a transfer application to maintaining instream flows.

Oregon, like California, has witnessed no water transfer activity attributable to its law to date (although applications for transfers have been received). The reasons include:

(1) lack of water use records to document the amount of conserved water;

(2) uncertainty over the definition of water that is "irretrievably lost" (which is a necessary component of conserved water);

(3) concern among water right holders--especially agriculture--that transferring conserved water will limit their flexibility in shifting future cropping patterns;

(4) farmers' distrust over granting instream flow rights; and

(5) inadequate financing available for water conservation measures.[90]

Conservation-transfer legislation similar to that in California and Oregon narrowly failed in the Colorado Legislature during the 1991 session. House Bill 1110 passed the House but was defeated in the Senate Agriculture, Natural Resources and Energy

Committee by one vote. Opposition centered around the potential for harm to downstream water rights holders (which suggests a concern over the ability to determine how much water is actually conserved).

One major water conservation/transfer agreement that has been reached was not consummated under an incentive-based statute. The Metropolitan Water District of Southern California (MWD) and the Imperial Irrigation District (IID) concluded four years of negotiations in December 1988 on an arrangement whereby MWD will finance the construction and initial operation of water conservation measures in the Imperial Valley in exchange for the transfer of 100,000 acre-feet per year of conserved water to its urban users. The conservation facilities will cost an estimated $92 million upfront. MWD will also cover up to $23 million in IID's indirect costs (which includes environmental mitigation expenses), defray $14 million in operating costs over the first five years, and pay $3.1 million in annual costs for the 35-year life of the agreement.[91]

It is important to emphasize that the agreement does not involve the acquisition of IID water rights. MWD will cover IID's conservation costs and have access to conserved water as part of a revised contract among IID, the Bureau of Reclamation, and two other districts using Colorado River water in Southern California. IID has contended that it should be able to market conserved water under California's conservation/transfer statute; MWD has argued that it should have access to the water as the next senior user on the Colorado River. The two sides have essentially agreed to disagree on the legal mechanism for transferring water in order to proceed with the conservation measures.[92]

The MWD-IID agreement may not be the best example of a negotiated settlement to transfer conserved water and avoid basin-of-origin impacts. Imperial was faced with a state Water Resources Control Board order to devise a conservation plan to preclude

waste or risk losing its water rights; without intervention by a regulatory agency, the settlement may not have been reached. The case nonetheless illustrates the potential quantities of water that may be realized through conservation, water whose transfer to other uses may reduce pressure on other sources and promote the public interest in water use.

PART FIVE: CONCLUSIONS

Public interest considerations are incorporated into water allocation decisions in a number of ways: through statutory definitions of criteria; court-imposed directives; land use regulations; and regional planning processes. It makes little difference whether an application to move water from one basin to another is for an original appropriation or for the transfer of an existing water right--interbasin diversions are likely to generate opposition regardless of the legal regimen employed to assess their effects. As the case studies suggest, in those instances where state law provides no requirement for public interest review, litigation may be used by protestants to leverage concessions--in the form of environmental mitigation or financial compensation--by transfer proponents.

Growing political sensitivities to environmental, economic and community concerns have made transfer proponents more willing to negotiate conditions to reduce impacts on basins of origin. Where the applicants have relied exclusively on traditional protections accorded to water rights in the law, they have seen protracted litigation and administrative proceedings drive up the costs of water transactions, thereby diminishing their value.

Since all western state water allocation systems allow for some degree of public interest review of water transactions regardless of the formal statutory or case law framework, the most appropriate role for state legislation may be to promote the more *efficient* operation of those systems. This objective may be accomplished by providing regulatory agencies and the courts with clearer direction as to what constitutes the public interest (including specific environmental and economic criteria that must be considered), as well as defining those interests that have legal standing to challenge a water transfer. The initial approach would help structure the permit review process and alert transfer applicants to the issues that may have to be included in an environmental impact assessment (which may assist them in determining whether their proposal is cost-effective).

The second would help the agency or court with jurisdiction in conducting the hearing process.

A more comprehensive approach would be to authorize regional water planning forums and to incorporate the resultant planning documents into state administrative hearings, thereby providing regulatory agencies with information on the values attributed to water in a specific area in advance of a transfer application. The focus of a subsequent decision then may shift from determining appropriate mitigation measures (which may not satisfy either party involved in the transaction) to finding alternative sources of water supply for both the applicant and residents in the basin of origin.

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Can not undo subsidy
might see it you get what you want
over a subsidy.

Implementation in Calif

Wind falls - Wipe outs
creation of public private value
by public investment -
property market - location

Greg Hobbs - Boulder Creek can you make
agreements with.

British Columbian Water - They did in for price.

Coping with uncertainty
regulation can create more
always present.

Sara Duncan How do you make water available
- deal -
But does this involve other users
others have interest in water.

Regulation - never avoid - if have reflecting consideration
others concerns about what you are doing
Purpose - always conflict
Seek ways to make efficient, meaning full
learning process for all involved
good way to avoid costly mistakes
build on wetlands - building sink
earth quake

Exploring issues - searching for solutions
with all failures of market - move focused market needed

1st win win 1st in Right one way to handle commons
but result

Going through process of change - not easy
need process

How to involve affected interests

Issues on Comprehensive planning

NIMBY Problems
Colonies

Can legislature rise above special/personal interests
Californian Commons did not.

Planning - as learning

Recog of Prob	
Decision to Act	Remains
Data Collection	unfreezing
Deter. Constraints/Objectives	changing
Form Operational Criteria	freezing
for Design	
Plan Design	
Testing	
Plan Evaluation	
Decision Taking	
Plan Impl / Review.	

1) Examine need to make decision for understanding
of what decision is to be about and its implications
2) any one party can veto if implications seen as unacceptably
harmful.
looking for Happy Solution - Fish, People, Future.

Self & determination
who makes decision

Risk assessment - can you really assess
- situation too complex
- can you really respond - Sanity and Jam

- Need to avoid clarity by default
Think first - but listen to go slowers - who does

- Can market marketing make problem better
- Some time
- market to drop price.