
## 2002 Report to the Legislature

# Trans Boundary Water

### Feasibility of Conducting Negotiations with Other States and Canada on Water Bodies Shared with Washington

**July 2003**

**Publication No. 03-11-009**

This report is available on the Department of Ecology website at:
http://www.ecy.wa.gov/biblio/0311009

For additional copies of this publication, please contact:

Department of Ecology
Publications Distribution Center
P.O. Box 47600
Olympia, WA 98504-7600
Email: ecypub@ecy.wa.gov
Phone (360) 407-7472

Refer to publication number 03-11-009


## 2002 Report to the Legislature

# Trans Boundary Water

### Feasibility of Conducting Negotiations with Other States and Canada on Water Bodies Shared with Washington

**Prepared by**
**George Schlender**
**Department of Ecology**
**Water Resources Program**
**Eastern Regional Office**

**July 2003**

**Publication No. 03-11-009**

# TABLE OF CONTENTS

# Part 1 - Executive Summary

## Introduction

This report is required by the Legislature under Engrossed Substitute Senate Bill 6387 which states that "the Governor, or the Governor's designee, shall consult with the states that share water bodies with the state of Washington, with Canada, and with other states that conducted similar negotiations, regarding issues and strategies in those negotiations and shall report to the standing committees of the legislature having jurisdiction over water resources by January 1, 2003.

"In conducting the consultation under subsection (c), the governor shall give priority consideration to interstate issues affecting the Spokane-Rathdrum Prairie aquifer including those issues affecting a safe and adequate supply of public drinking water, as provided by municipal governments."

The governor's designee, Department of Ecology Director Tom Fitzsimmons was charged with providing the report. The bulk of the work was delegated to Ecology's Eastern Regional Office located in Spokane.

## Agreements with other states that share water with Washington

There are two signed agreements between the states of Idaho and Oregon. Each agreements is fairly limited in scope and represents cooperative efforts to share information or implement an adjudication decree:

- **Pullman-Moscow Aquifer –** This agreement is between the Idaho Department of Water Resources and Washington Department of Ecology regards the coordinated management of the Pullman-Moscow subterranean aquifer.

- **Regulation of water rights between Washington and Oregon in the Walla Walla Basin – Washington** has signed a memorandum of agreement with Oregon regarding the delivery of water from Oregon to Washington in the Walla Walla Basin.

## Consultation with Idaho on the Spokane-Rathdrum Prairie Aquifer

In April 2002, a meeting was held with Karl Dreyer, Director of the Idaho Department of Water Resources (IDWR), Bob Haynes, Regional Manager of the Idaho Department of Environmental Quality, other Idaho state staff and Washington Department of Ecology senior staff to discuss aquifer management options. The group determined that technical information was needed about the aquifer, especially from Idaho. At least three other formal meetings were scheduled after April to discuss each state's requirements, technical information, aquifer data and to delineate roles and responsibilities. Lead contacts from each state were also selected. They are:

- Hal Anderson – Administrator, Planning and Technical Services, IDWR
- George Schlender – Section Manager, Ecology, Water Resources Program

A workgroup of stakeholders and agency staff from both states conducted a public workshop about the Spokane-Rathdrum Prairie Aquifer on June 20, 2002. The workshop was well attended by the public and local and state agencies. The need for a comprehensive bi-state aquifer study was a primary outcome from the workshop. An interim steering committee was established to guide and provide input into the study process and funding management options and structure.

The interim steering committee is made of stakeholders, state agencies, and local government from both states and elected officials. This group has provided guidance on aquifer study structure and the process for public participation. Environmental stakeholder groups have been very active on aquifer issues and participate in the bi-state aquifer interim steering committee.

Washington has not issued new water rights within the Spokane Rathdrum Prairie Aquifer for almost 10 years. Watershed planning under RCW 90.82 has been active in the Middle and Little Spokane Watersheds (which includes the aquifer) since 1998. Ecology is waiting on the outcome of the planning process to guide its processing of water right applications in Washington. In Idaho, a moratorium on new water withdrawals was requested by environmental groups. Public hearings were held in September 2002 and were heavily attended by the public.

The Idaho Department of Water Resources concluded it had insufficient information on the technical aspects of the aquifer to issue a moratorium. However, the state did agree to create a "groundwater management area" and has appointed a committee to review new water right applications on a case by case basis. This committee is made up of stakeholders from the environmental groups, local government and agency staff.

The current status regarding discussions about the Spokane-Rathdrum Prairie Aquifer study is:

- Federal funding of the aquifer study is stalled but recent congressional activity may allow funding in 2003.
- If federal monies become available, Washington and Idaho may need to supply matching funds up to $80,000 each as well as staff work and other "in-kind" contributions toward the first phase of the $3.5 million aquifer study.
- Water resources policy staff in both Idaho and Washington will continue to meet to talk about organization structure of the study and review actions to date.
- The joint chambers of commerce of the cities of Coeur d' Alene, Idaho, and Spokane, Washington, are trying to set up a meeting with local legislators from both states and the directors of Idaho Department of Water Resources and Ecology to discuss aquifer issues, details of the study and funding needs. This meeting is expected to occur during the break in the respective states' legislative sessions.

## Agreements with Canada

Washington has three signed agreements with Canada regarding management and cooperation of shared water bodies:

**Lake Roosevelt-Columbia River and Tributary Systems** which delineates cooperation and coordination on water quality discharges and large consumptive use withdrawals above 10 cubic feet per second on the Columbia River or tributary systems to the Columbia River that affect both Washington and Canada. Most of this agreement is focused on waste discharges in Canada and not water allocation. However, consultation was initiated in July 2002 surrounding the Cascade Power Project on the Kettle River in Canada. Agency staff from Washington and Canada inspected the proposed hydro-power site and discussed water policy issues and implications. The Cascade Power Project is a river power plant, non-consumptive and should not come under the agreement. Canada decided to consult with Washington anyway due to cross border water issues.

**Abbotsford-Sumas Aquifer agreement** which was signed in October 1996 concerning the referral of water right applications within the Abbotsford-Sumas aquifer. Very little action concerning the allocation of water has happened since the agreement was signed. Most of the activity has focused on water quality issues through the Abbotsford-Sumas Aquifer International Task Force, particularly controlling the levels of nitrates in the aquifer.

**The International Osoyoos Lake Board of Control** which is comprised of individuals appointed from Canada and Washington to implement the orders from of the International Joint Commission (Canada and United States) regarding the alteration and operation of Zosel Dam which controls the water levels in Osoyoos Lake. Zosel Dam has been replaced by a new structure owned by the state of Washington and operated under contract by the Oroville-Tonasket Irrigation District. The board meets on an annual basis and reports back to the Joint Commission every year to assure that daily lake levels and flows are kept to assure compliance with the orders from the Commission.

**A review of other states trans-boundary water agreements**
Ecology conducted a review of interstate agreements through literature research, Internet research, proceedings from a recent Gonzaga University Law School seminar on aquifer law and a recently published book by the American Society of Civil Engineers on water agreements.

There are four established approaches for interstate water allocations:

1. Suits for equitable apportionment,
2. Interstate compacts and
3. Congressional allocation
4. Cooperative agreements

The most common interstate agreement that exists in the United States West of the Mississippi River is the compact agreement. There are 22 interstate compacts containing a specific water allocation formula west of the Mississippi. Ecology's review of Western states water agreements indicated several cooperative agreements that have processed between states outside a formal interstate compact. The cooperative agreement may be a very viable option but requires a good faith effort from participating states to uphold it in lieu of a binding Congressional compact.

The process for negotiation and approval of interstate compacts follows a five step process:

1. Congress authorizes the states to negotiate a compact.
2. State legislatures appoint commissioners.
3. Commissioners meet, usually aided by a federal chairman, to negotiate and sign the agreement.
4. State legislatures then ratifies the compact.
5. Finally, the U.S. Congress ratifies the compact.

## Recommendations

The following recommendations are made as a result of review of agreements in other states and consultation with the state of Idaho on the Spokane-Rathdrum Prairie Aquifer:

- There does not appear to be a need at this time to negotiate any additional agreements with bordering states and Canada on allocation of trans-boundary waters. Preliminary discussions will take place regarding renewal of the operating order (due to expire in 2012) through the Joint Commission on Lake Osoyoos. Current administrative agreements between bordering states and Canada are working and mostly provide coordination and sharing of information.
- An interstate agreement on the Spokane-Rathdrum Prairie Aquifer is premature at this time due to the need for a comprehensive study of the aquifer, especially the Idaho portion.
- Federal funding of the Spokane-Rathdrum Prairie Aquifer has been proposed by Congress and may become available in 2003. Washington will be expected to come up with matching money and in-kind services. Previous figures for the matching funds were estimated at $80,000. Ecology will make a budget request to the legislature for the $80,000 match for the comprehensive aquifer study.

# Part 2 - Existing Agreements with Bordering States and Canada

## Agreements with other States that share water with Washington

Washington has signed two water allocation agreements with its border states, Idaho and Oregon. Each agreement is fairly limited in scope and represents cooperative efforts rather than allocation of water between the two states. Both agreements do not limit the states from allocating water but merely share information on which decisions can be made.

### Idaho

**Pullman-Moscow Aquifer**

There is only one signed agreement between Idaho and Washington. This agreement is with the Department of Ecology and Idaho Department of Water Resources on the coordinated management of the Pullman-Moscow aquifer. Signed in April 1992, the agreement outlines coordination measures between the two states and the Pullman-Moscow Water Resources Committee. The states share information about new requests for water rights within the zone of influence of the aquifer. Since Ecology has not processed any new water right applications within the zone of influence of the Pullman-Moscow aquifer area since the agreement was signed, no applications have been forwarded to the Committee. However, the aquifer Committee is active and has received grants to further study the aquifer and develop management recommendations. A copy of the agreement is shown in **Appendix 1**.

### Oregon

**Regulation of water rights between Washington and Oregon in the Walla Walla Basin**

Washington has a memorandum of agreement with Oregon regarding the delivery of water from Oregon to Washington in the Walla Walla Basin. Watermasters in both states have agreed to work cooperatively to regulate water rights consistent with the federal adjudication decree in the Walla Walla Basin. This agreement is limited in scope to certain streams and water rights in order to carry out the requirements of the federal adjudication within the Walla Walla basin. There have been attempts to reach agreements with Oregon to protect instream flows within the Walla Walla basin but no new agreements have been initiated due to requirements in existing water code between the states. A pilot program to protect water between the states using trust water rights and leasing contracts currently is being reviewed. A copy of this agreement is included in **Appendix 2**.

### Multi-state Agreements (not signed or ratified)

**Columbia River Natural Resources Management Compact (Idaho, Montana, Oregon and Washington)**

This compact is not yet in effect and current status is unknown. The compact has not been approved by Congress. This proposed compact sets up a "Columbia River Governance Commission" made of six members of each state's legislature.

### The Spokane-Rathdrum Prairie Aquifer

Consultation with Idaho concerning the Spokane-Rathdrum Prairie Aquifer began in April 2002. The impetus to begin discussions on the aquifer occurred when Idaho received several water right applications for two power plants. A meeting was held with Karl Dreyer Director of the

Idaho Department of Water Resources (IDWR), Bob Haynes IDWR Regional Manager, Idaho Department of Environmental Quality staff and Ecology senior staff to discuss aquifer management options. A key outcome of the meeting was the need for technical information on the aquifer, especially in Idaho. Karl Dryer was very adamant that an interstate compact on the aquifer was premature and that he favored other possible management approaches.

At least three other formal meetings were scheduled after April to discuss each state's requirements, technical information, aquifer data sharing and delineate roles and responsibilities. Lead contacts within each state regarding aquifer policy were also selected. The states also discussed proposed organizational structures for comprehensive technical study of the aquifer based on experience with Treasure Valley in Idaho and the Snake River Plain.

A workgroup of stakeholders and agency staff from both states organized a facilitated public workshop on the Spokane-Rathdrum Prairie Aquifer on June 20, 2002. The workshop was well attended by the public and local and state agencies. Both Idaho and Washington provided technical and administrative presentations on the aquifer and water law at the workshop. Significant public input on policy and technical data needs concerning the aquifer was taken by the facilitation group and many volunteers. Congressional participation at the workshop through a phone link was provided by U.S. Sens. Larry Craig (Idaho) and Patty Murray (Washington). Both Senators displayed support for a comprehensive aquifer study and promised to try and obtain federal funding. A comprehensive bi-state aquifer study was a primary outcome from the workshop. An interim steering committee was established to guide and provide input into the study process. A copy of the agenda and proceedings from the June workshop is attached under **Appendix 3**.

The interim steering committee is made of stakeholders, state agencies, local government from both Idaho and Washington and elected officials. This group has provided guidance on aquifer study structure and the process for public participation.

The state of Washington has not issued new water rights within the Spokane Rathdrum Prairie Aquifer for almost 10 years. Watershed planning under RCW 90.82 has been active in the Middle and Little Spokane Watersheds (which includes the aquifer) since 1998. Ecology is awaiting the outcome of the planning process to guide its water right processing actions. In Idaho, a moratorium on new water withdrawals was requested by environmental groups of IDWR. Public hearings were held in September 2002 and heavily attended by the public. The outcome of the moratorium process in Idaho is a "groundwater management area." IDWR ruled that it had insufficient information on the technical aspects of the aquifer to issue a moratorium. The groundwater management area will screen new applications on a case by case basis through a policy committee made up of stakeholders and agency staff.

Current status of the discussions on the Spokane-Rathdrum Prairie Aquifer is:

- Federal funding of the aquifer study is stalled but recent congressional activity may allow it to be funded in 2003.
- Each state may need to supply matching funds for the $550,000 first phase of the estimated $3.5 million dollar study. Washington's share, together with in-kind match of

50 percent, is about $160,000. Ecology may need to request legislative funding for approximately $80,000 to match the state of Idaho to start the study.

- Water resources policy staff between Idaho and Washington will continue to meet to talk about organization structure of the study and review previous actions to date.
- The joint chambers of commerce of the cities of Coeur d' Alene, Idaho, and Spokane, Washington, are trying to set up a meeting between local bipartisan legislators and the directors of IDWR and Ecology to discuss aquifer issues and the details of the study and funding needs. This meeting is anticipated sometime during the break in each state's respective legislative sessions.

## Agreements with Canada

The state of Washington has signed three agreements with Canada regarding management and cooperation about shared water bodies.

**Lake Roosevelt / Columbia River and Tributary Systems**
The first is an agreement signed in April 1996 with Kootenai Region of the Ministry of Lands and Parks regarding coordination on Lake Roosevelt and Columbia River issues. The agreement delineates cooperation and coordination on water quality discharges and large consumptive use withdrawals above 10 cubic feet per second (cfs) on the Columbia River or tributary systems that affect both Washington and Canada. While this agreement has provisions for sharing information on large water withdrawals between the two countries, the main focus has been on waste discharges flowing from Canada into the United States. In July 2002, this agreement was the basis to facilitate a meeting with British Columbia water officials in Grand Forks, B.C., on the Cascade Power Project on the Kettle River. The Cascade Project is a run of the river power plant and would be considered non-consumptive under Washington water law. While the 1996 agreement with the Kootenai Region specifies consumption use applications above 10 cfs on the Columbia or main tributaries, the meeting on the Cascade Power Project was appropriated due to stakeholder interest in Washington from the Kettle Watershed Planning unit. A copy of this agreement is included under **Appendix 4**.

**Abbotsford-Sumas Aquifer**
This agreement was signed in October 1996 concerning the referral of water right applications within the Abbotsford-Sumas aquifer. The agreement describes procedures for water allocations between the shared water body of the Abbotsford-Sumas aquifer in Canada and Sumas, Washington. There has been little activity on water rights applications since this agreement was signed. While the Abbotsford-Sumas Aquifer Task Force has been active, their work has primarily focused on water quality issues within the aquifer, especially nitrates. A copy of this agreement is included under **Appendix 5**.

**The International Osoyoos Lake Board of Control**
The board is comprised of individuals appointed from Canada and Washington to implement the orders from of the International Joint Commission (Canada and United States) relative to the alteration and operation Zosel Dam which controls the level of Osoyoos Lake. Zosel Dam has been replaced by a new structure owned by the state of Washington and operated under contract by the Oroville-Tonasket Irrigation District. The board meets on an annual basis and reports

back to the Joint Commission in April of each year to assure that daily lake levels and flows are kept to assure compliance with the orders from the Commission.

# Part 3 – Review of Agreement and Compacts in other States

## Review of other interstate trans-boundary water agreements

There are three established approaches for interstate water allocations:

1. Suits for equitable apportionment
2. Interstate compacts
3. Congressional allocation

It should be noted that in reviewing the agreements, there are other processes existing outside the federal process described above. These agreements were mainly cooperative instruments between states or involved formal councils between states. One local example is the Northwest Power Planning Council which operates in Washington within the Columbia Basin.

Ecology conducted a review of interstate agreements through literature research, Internet research, proceedings from a recent Gonzaga University Law School continuing legal education seminar on aquifer law and a recently published book by the American Society of Civil Engineers on water agreements. **Appendix 6** contains a summary of compacts and water agreements in the Western United States.

## Review of research by Dr. Doug Kenney, University of Colorado School of Law

Dr. Kenney has authored several recent publications on interstate water agreements. He was a speaker at the Gonzaga University law conference held in Spokane in September 2002. Referenced in a paper presented at the "Law of the Aquifer" conference, Kenney said the most common interstate water agreement in states west of the Mississippi River is the compact agreement. There are 22 such interstate compacts containing a specific water allocation formula.

The process for negotiation and approval of interstate compacts follows a five step process:

1. Congress authorizes the states to negotiate a compact.
2. State legislatures appoint commissioners.
3. Commissioners meet, usually aided by a federal chairman, to negotiate and sign the agreement.
4. State legislatures ratify the compact.
5. Finally, the U.S. Congress ratifies the compact.

A key element in interstate water allocation is the mathematical formula used to apportion flows. In determining how to apportion water within the mathematical formula, sound science and data are extremely important to the development of an accepted formula.

Based on Kenney's research, out of the 22 interstate compacts, only three reference groundwater. Most states sidestep the issue of ground andsurface water interaction.

Key elements that can be derived from Dr. Kenney's review of agreements as shown in **Appendix 7** are:

- Agreements need to consider the political viability in order to survive.
- Agreements should foster a regional perspective and comprehensively look at the watershed to be managed.
- Membership and participation in the process needs to balance federal and state interests in the region and address other stakeholder concerns in the watershed.
- There is a significant financial commitment to water negotiations that requires staffing and technical assistance to be successful.
- The track record of many agreements and organizations to manage water is generally poor – however, that should not discourage new innovation in the development of agreements.

### Recent interstate agreements relating to groundwater

In December 2002, an agreement was reached concerning groundwater affecting the 1943 interstate compact of the Republican River. This agreement, reached between Kansas, Nebraska and Colorado, covered groundwater issues after Kansas filed suit alleging Nebraska had overused their 1943 allocation of the Republican River compact after allowing thousands of irrigation wells to be drilled and used. A comprehensive groundwater model jointly developed between Kansas, Nebraska and the federal government will be used to determine groundwater usage. This agreement is one of the first to address ground and surface water, demonstrating the need for comprehensive technical data, such as modeling, on which to base decisions.

### Review of American Society of Civil Engineers publication on water agreements

The Society recently published a book entitled "Model Water Sharing Agreements for the 21st Century." The book describes three different types of processes to reach water agreements. The book uses a commentary and annotated agreement language process to help develop water agreements. The guidance from the ASCE publication would be helpful for Washington when the state is ready to scope proposed agreement structures and benefits of one method versus another. Regardless of the model that might be chosen to negotiate an agreement, the book cautions the need for comprehensive water resources assessment. The assessment must consider surface and groundwater to develop a conceptual model of the basin to define resources available. This concept of comprehensive technical data is consistent with other experts on water agreements.

### Summary of the review of interstate water agreements and technical literature

Ecology did not do an exhaustive review of all interstate water agreements. The department's review of agreement processes and other state agreements focused on what could be obtained through an Internet search, recent publications and conference data. Information that was found is summarized below:

- Generally, agreements to allocate water between states have established federal processes that Washington has little authority to change.
- Agreements and compacts need comprehensive, unbiased technical data to base allocation decisions and to develop apportionment formulas.

- Most existing agreements and compacts only look at surface water and rarely mention groundwater.
- There is some recent agreement data from Kansas and Nebraska that may be useful for future agreements that Washington may undertake.
- Agreements must have political support and authority to negotiate compacts together with staff and technical support to be successful.
- There are other processes that exist to allocate water between states and have not been ratified by Congress. These agreements are cooperative and rely of the goodwill of the states to be successful.
- There are quasi-federal processes that exist to manage water between states. One such local example is the Northwest Power Planning Council.
- Examples of agreement language and process outlined within the American Society of Civil Engineer's publication on model water-sharing agreements could be helpful for Washington if we decide to negotiate an agreement.

## Recommendations

The following recommendations are made as a result of review of agreements in other states and consultation with the state of Idaho on the Spokane-Rathdrum Prairie Aquifer:

- There does not appear to be a need at this time to negotiate any additional agreements with bordering states and Canada on allocation of trans-boundary waters. Preliminary discussions will take place regarding renewal of the operating order (due to expire in 2012) through the Joint Commission on Lake Osoyoos. Current administrative agreements between bordering states and Canada are working and mostly provide coordination and sharing of information.

- An interstate agreement on the Spokane-Rathdrum Prairie Aquifer is premature at this time due to the need for a comprehensive study of the aquifer, especially the Idaho portion.

- Upon completion of the technical study of the Spokane-Rathdrum Prairie Aquifer, the states of Idaho and Washington would have the technical data to begin interstate negotiations of the bi-state aquifer. The study is expected to take up to three years to complete.

- Federal funding of the Spokane-Rathdrum Prairie Aquifer has been proposed by Congress and may come available in 2003. Washington will be expected to come up with matching money and in-kind services. Previous figures for the matching funds were estimated at $80,000. Ecology will make a budget request to the legislature for the $80,000 match for the comprehensive aquifer study.

# Appendices 1 - 5

## Appendix 6:

**Cross State Water Agreements, Interstate Compacts, and Transboundary Agreements of the Western United States**

**19 pages**

**and**

## Appendix 7:

**Coordination Mechanisms for the Control of Interstate Water Resources: A synthesis and review of the Literature**

**Prepared by Douglas S Kenney, PhD**

**36 pages**

Available upon request from:

Department of Ecology
Water Resources Program
PO Box 47600
Olympia, WA 98504-7600
(360) 407-6878
jbei461@ecy.wa.gov

BEFORE THE DEPARTMENT OF ECOLOGY
OF THE
STATE OF WASHINGTON

AND THE

DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF THE )
COORDINATED MANAGEMENT )
OF THE PULLMAN-MOSCOW )
GROUND WATER AQUIFER )

INTERAGENCY AGREEMENT

WHEREAS the ground water resource located in the Palouse River/Hangman Creek basins of Latah County Idaho and Whitman County Washington is an important water source for citizens of both Washington and Idaho and

WHEREAS the Pullman Moscow Water Resources Committee (PMWRC) made up of representatives from Whitman County Latah County City of Pullman City of Moscow Washington State University and University of Idaho has been established in recognition of local concerns for the safety and reliability of the ground water resource because of continuing declines in ground water levels in the Pullman-Moscow aquifer and

WHEREAS computer-simulated modeling studies sponsored by the PMWRC indicate that the ground water level declines will continue if annual rate of withdrawal from the aquifer increases and

WHEREAS applications filed in both Washington and Idaho in recent years for large withdrawals of water from the aquifer indicate the potential exists for substantially increased ground water withdrawals and an associated decline in ground water pumping levels and

WHEREAS the PMWRC has adopted a coordinated management plan which sets goals for improved management of the Pullman Moscow aquifer and action plans aimed at achieving these goals have been adopted by each of the entities belonging to the PMWRC and

WHEREAS the Director of the Department of Ecology of the State of Washington is charged with the administration of ground water resources to maintain a safe sustained yield (Revised Code of Washington 90 44 130) and is authorized by Washington law to represent the state in matters pertaining to interstate water rights and water development and

WHEREAS the Director of the Department of Water Resources of the State of Idaho is charged with the administration of ground water to maintain reasonable pumping levels (Section 42 226 Idaho Code) and is authorized by Section 42 1805 Idaho Code to represent the state in matters pertaining to interstate water rights and water development and

WHEREAS the responsible officials of each state desire to achieve coordinated management of the ground water resources of the Pullman Moscow aquifer in accordance with their respective state laws and in cooperation with the PMWRC and its member entities

NOW THEREFORE IT IS HEREBY AGREED THAT administration of the ground water resources of the Pullman Moscow aquifer will be in accordance with the adopted Groundwater Management Plan of the PMWRC to the extent that such plan can be implemented and administered under the laws of each state The following specific actions will be taken by the administrative agency of each state to implement the plan

1 Issuance of new permits to appropriate ground water and approval of applications to change existing ground water rights will be guided by the withdrawal limitations in the PMWRC plan The state administrative agencies will provide copies of all such applications to the PMWRC for review and evaluation relative to compliance with the PMWRC plan The decision making authority rests with the state agency but the recommendations of the PMWRC will be made part of the official record for each application

2 Applicants proposing significant (as determined by the director of the state within which the application is filed) increases in withdrawal of ground water from the Pullman-Moscow aquifer will be required to provide information on alternative sources of water conservation practices to be implemented to reduce the quantity of water withdrawn and similar information needed to demonstrate compliance with the PMWRC plan

3 Applications for transfer of ground water rights across the state line will be considered in accordance with the applicable laws of each state and will be guided by the PMWRC plan

4 The administrative agency of each state will within the funding available and the priorities set by the director of each state endeavor to enforce the applicable laws of each state relative to supervision of construction and maintenance of wells unauthorized diversion and use of water and conservation of water to achieve the goals of the PMWRC plan

5 Within funding specifically available for such purposes the administrative agency of each state will cooperate in studies necessary to evaluate the ground water resource and improve management of it

6 A representative of each agency will be designated by the director of each agency as responsible for coordination of the agency's activities with the PMWRC

IT IS FURTHER UNDERSTOOD that this agreement is effective upon signature by both directors and accomplishment of such filing notice or approval requirements as may be necessary This agreement shall remain in effect until terminated by written notice by either party

DATE Apr 18, 1992

FOR CHUCK CLARKE
DIRECTOR
WASHINGTON DEPARTMENT OF ECOLOGY

DATE April 20, 1992

R KEITH HIGGINSON
DIRECTOR
IDAHO DEPARTMENT OF WATER RESOURCES

# MEMORANDUM OF AGREEMENT BETWEEN THE OREGON WATERMASTER AND THE WASHINGTON WATERMASTER FOR DELIVERY OF WATER FROM OREGON TO WASHINGTON IN THE WALLA WALLA BASIN

There are several streams that flow from Oregon to Washington in the Walla Walla River Basin There is a need for a procedure for regulating these waters across the state line

A stipulation before the Supreme Court Of The United States, Original No. 17 In Equity was signed by the States of Washington and Oregon in October 1933 (attached). This document identifies which inter-state streams will be regulated

This memorandum of agreement (agreement) will outline procedures for delivering water from Oregon to Washington for certain inter-state streams The inter-state streams to be regulated are Mud Creek and its tributaries, East Branch of Mud Creek, Middle Branch of Mud Creek, Pine Creek and its tributaries, Schwartz Spring Branch and streams This agreement is to be followed by the Washington Watermaster and the Oregon Watermaster when regulating those inter-state streams

When a Washington resident is short of water on any of the inter-state streams identified in the above document, they should first contact the Washington Watermaster about the deficiency When the Oregon Watermaster receives a complaint, for lack of water, from the Washington Watermaster, the Oregon Watermaster will request the following criteria to be completed, by the Washington Watermaster, prior to regulating Oregon's junior water rights in favor of Washington's senior water rights

The Washington Watermaster will

1 Investigate the complaint and determine that the Washington resident does have a valid Washington water right and that its limits in quantity and use are not exceeded

2 Identify if there is a deficiency in the supply of water at the point of diversion for the proposed use

3 Investigate upstream water users in the State of Washington for over appropriation or illegal use without benefit of a water right If so, regulate those users

4 Regulate in Washington any junior water users upstream from the complaint and ensure the water is used in accordance with the water right and used beneficially without waste

5 Monitor the water use of the complainant to insure the water is used in accordance with the water right and used beneficially without waste

6 Contact the Oregon Watermaster in regards to the validity of the complaint, and the findings of your investigation and regulations

7 Notify the Oregon Watermaster of any shut down in the use of the water or no further demand, so the Oregon Watermaster can turn their junior water users back on

Based on a request to regulate certain inter-state streams, and after the above requirements are met, the Oregon Watermaster will·

1 Investigate upstream users in the State of Oregon for over appropriation or illegal use without benefit of a water right If so, regulate those users.

2 Regulate its junior water users and deliver the water to the state line between Oregon and Washington

3 The Oregon Watermaster will only regulate the waters of the streams stipulated in the Supreme Court agreement identified above Any supplemental water from the Walla Walla River in Oregon, that is diverted to the Oregon users on the subject stream, will not be regulated pursuant to this Memorandum Of Agreement

Michael F Ladd

MICHAEL F LADD
North Central Regional Manager
Oregon Water Resources Dept

4-28-92
Date

Theodore M. Olson

THEODORE M OLSON
Section Supervisor
Eastern Regional Office
Water Resources Program
Washington Department of Ecology

5/1/92
Date

# Spokane Valley - Rathdrum Prairie Aquifer Round-Table Discussion

**June 20, 2002**

# Agenda

*Shaping the Future of the Spokane / Rathdrum Prairie Aquifer*
*A Round-Table Discussion to Share Perspectives & Ideas*

---

## Welcome and Overview.

9 00 am — Welcome, Background, and Overview from Planning Process Initiator Representatives

- Jeff Selle, Spokane Area Regional Chamber
- Neil Beaver, The Lands Council

9 20 am — Overview of Today's Agenda

- Emmett Fiske, Facilitator
- Sarah Hubbard-Gray, Facilitator

## Our Shared Water

9 30 am — What We Know and Don't Know About the Aquifer

- Ken Lustig, Panhandle Health District
- Stan Miller, Spokane County Water Quality Program
- John Covert, Washington Department of Ecology
- Brian Painter, Idaho Department of Environmental Quality

10 30 am — Legislative Update / Funding for the Proposed Study

- Senator Larry Craig, Idaho

10 50 am — Break

11 05 am — Similarities and Differences between Idaho and Washington Water Law

- George Schlender, Washington Department of Ecology
- Dave Tuthill, Idaho Department of Water Resources

11 35 am — Components of a Regional Hydrologic Study

- Christian Petrich, Idaho Water Resources Research Institute

11 50 am Transitioning to the Afternoon Session

- Questions and process for small group discussion
  1 What questions should the proposed comprehensive, bi-state study answer?
  2 What are the best ways to keep stakeholders meaningfully informed and involved during the study phase?
- Questions and process for providing input at comment stations
  3 Who needs to be included in further efforts involving the Spokane / Rathdrum Prairie Aquifer (who are the affected stakeholders)?
  4 How can the broader public be effectively informed about the proposed comprehensive, bi-state study?
- Emmett Fiske, Facilitator
- Sarah Hubbard-Gray, Facilitator

12 10 pm Lunch

- Senator Patty Murray, Washington, will provide a legislative update via phone at approximately 12 15 pm

## Participant Perspectives.

1 00 pm Small Group Discussions / Question #1 (Round 1)

1 45 pm Small Group Discussions / Question #2 (Round 2)

2 25 pm Comment Stations / Questions #3 and #4 (Round 3)

3 05 pm Break

3 20 pm Sharing of Participant Perspectives (Break-Out Presentations)

3 40 pm Moving from Today into the Future (Next Steps)

4 00 pm Provide Written Evaluations of Today's Session

4 10 pm Adjourn

# INTERAGENCY MEMORANDUM OF UNDERSTANDING
# BETWEEN
# THE STATE OF WASHINGTON
# DEPARTMENT OF ECOLOGY
# EASTERN REGIONAL OFFICE

# AND

# THE PROVINCE OF BRITISH COLUMBIA
# MINISTRY OF ENVIRONMENT, LANDS AND PARKS
# KOOTENAY REGION

This two party agreement is made and entered into by and among the Department of Ecology, hereinafter referred to as "Ecology" and the Ministry of Environment, Lands and Parks hereinafter referred to as "BC Environment

Whereas, the Environmental Cooperation Agreement of May 7, 1992 between the Province of British Columbia and the State of Washington, mandated coordinated action and information sharing between the State and the Province on environmental matters of mutual concern and the establishment of Task Forces to address issues of major environmental significance

Whereas, environmental pollutants in the international boundary portion of the Columbia River drainage can travel across the border and may be a source of concern to the parties to this MOU and area residents,

Whereas, Ecology and B C Environment are parties to a formal Memorandum of Understanding regarding information sharing on air emission sources (April 14, 1994)

Whereas, the Lake Roosevelt Water Quality Council which provided a forum for Ecology and B C Environment to cooperate on water quality issues related to Lake Roosevelt and the Upper [Lower] Columbia River ceased operation in September, 1995 as a planning and coordinating body

Whereas, at the June 9, 1995 meeting of the British Columbia/Washington Environmental Cooperation Council, B C Environment and Ecology managers were directed to prepare a Memorandum of Understanding to assure continued coordination and cooperation relative to major environmental issues within the international portion of the Columbia River drainage

Whereas, the regulatory/oversight responsibilities over waste discharges rests primarily with Ecology and B C Environment as the regulatory agencies of the State and the Province

Therefore, B C Environment and Ecology hereby enter into this Memorandum of Understanding, hereafter called the MOU

This MOU incorporates by reference the four party MOU on Air Quality between the State of Washington Department of Ecology, The State of Washington Northwest Air Pollution Authority, The Province of British Columbia Ministry of Environment, Lands and Parks, and The Greater Vancouver Regional District, as it applies to this portion of the Columbia River drainage

B C ENVIRONMENT AND ECOLOGY, MUTUALLY AGREE TO

- in accordance with section III a) of attachment 1, provide timely prior notification of proposed discharges to the water or land which have significant potential for cross boundary water quality impacts
- in accordance with section III b) of attachment 1, provide timely prior notification of proposed significant consumptive water use
- in accordance with section III c) of attachment 1, provide an opportunity for comment on planning activities that may have trans-boundary impacts
- in accordance with section III d) of attachment 1 provide timely notification of significant spills to the Columbia River including tributary streams

- in accordance with section III e) of attachment 1, share air and water quality monitoring data
- in accordance with section III f) of attachment 1, provide the opportunity for trans-boundary public comment on proposals under consideration by the agency with jurisdiction
- in accordance with section III f) of attachment 1, jointly facilitate public information sharing meeting upon mutual agreement of need
- specify appropriate contacts within each agency to facilitate timely sharing of information

Statutory Powers

Nothing in this Memorandum of Understanding shall be construed as affecting or limiting the legislative or statutory powers of the signatories to this memorandum

Termination

The period of performance of this MOU shall commence on the date it is signed by both parties and remains in effect until terminated by either or both of the parties by way of 30 days prior written notification

IN WITNESS THEREOF, the parties execute this agreement

Pic [illegible] Parks

Dennis G McDonald
Regional Director
Secretary [illegible]

St [illegible] Washington
Department [illegible]

Claude A Sapp Ignton
Regional Director
Eastern Region

4

**ATTACHMENT 1**

**SCOPE OF WORK**

**PRIOR CONSULTATION AND INFORMATION SHARING**

**ON**

**ENVIRONMENTAL ISSUES**

I Coordination and Cooperation

Air and water quality are issues of mutual concern to both parties in this agreement Because point and nonpoint sources of contamination on one side of the international boundary have the potential to impact environmental quality on the other side, it is imperative that regulatory agencies in both Washington and British Columbia coordinate their regulatory actions and cooperate in sharing relevant environmental quality information necessary to ensure environmental protection as provided by both jurisdictions To this end, this MOU is entered into by the agencies on both sides of the border with the most direct regulatory impact on cross-boundary environmental quality issues These are the British Columbia Ministry of Environment, Lands and Parks and Washington State Department of Ecology This MOU addresses the roles and responsibilities of these agencies in consulting with each other early in the application process concerning significant environmental permits, licenses, monitoring and planning activities

II Geographic Area of the Scope of Work

The area of work encompasses the international portion of the Columbia River drainage defined as the main stem Columbia River between Grand Coulee Dam and

1

Hugh Keenleyside Dam and the Pend Oreille River within Washington State and British Columbia

III Elements of Prior Consultation and Information Sharing

There shall be prior consultation and information sharing concerning environmental activities between B C Environment, Kootenay Regional Office (Nelson) and Ecology, Eastern Regional Office (Spokane) as follows

a) Wastewater Discharges/permits – At least thirty (30) days prior to the issuance, re-issuance of a permit, or significant modification (significant being defined in accordance with normal business practices followed by the regulating agency) of an existing waste discharge permit that may affect the international portion of the Columbia River drainage, the parties will submit a complete application package to each other for review and comment The permitting agency shall provide a copy of the final permit and upon request, the Responsiveness Summary (technical report) of the reviewing agency Discharges of effluent to ground that may adversely affect the cross boundary surface or ground water quality shall also be included in the review and consultation process

b) Consumptive Use of Water – at least thirty (30) days prior to the issuance of significant (in excess of 10 cfs) permanent consumptive water rights that could effect cross border stream flow, the permitting agency shall provide application information to the reviewing agency for comment The final decision will be copied to the reviewing agency

c) Water Drainage Basin Planning – From time to time, water drainage basin planning activities may be contemplated for a basin located within the geographic

11

area of this MOU If in the opinion of the planning agency there will be cross-boundary impacts, the jurisdiction affected by the planning activities or decisions will be offered the opportunity to review and participate in the planning process

d) Emergency Spill Response – In addition to formal notification procedures, Ecology and B C Environment will continue informal early notification of spills to the international portion of the Columbia River drainage

e) Data Exchange – Upon request, all available environmental data from the international portion of the Columbia River drainage within the possession of either party to this agreement will be shared between the agencies

f) Public Involvement – Either agency may have the lead responsibility for approving environmentally significant projects or activities that have the potential to cause cross border impacts Upon the request of either B C Environment or Ecology, the public within the geographic area of this agreement, will be given the opportunity to review and comment in writing or verbally on a proposal under consideration by the agency with jurisdiction B C Environment and Ecology agree to jointly facilitate public information sharing meetings as the need arises The location of these meetings will alternate between British Columbia and Washington State

111

APPENDIX to April 12, 1996
BRITISH COLUMBIA/WASHINGTON
MEMORANDUM OF UNDERSTANDING

# MEMORANDUM OF AGREEMENT
Related to
REFERRAL OF WATER RIGHT APPLICATIONS

Between the
State of Washington
as represented by the Department of Ecology,
herein called "Ecology"

and the

Province of British Columbia
as represented by the Minister of Environment, Lands and Parks,
herein called "the Ministry"

*October 10 1996*

**RECITALS**

WHEREAS, the Environmental Cooperation Agreement of May 7, 1992, between the Province of British Columbia and the State of Washington, proposed consultation and information sharing between the State and the Province on environmental matters of mutual concern, including water resource management issues such as water resource allocation,

WHEREAS, the Memorandum of Understanding of April 12, 1996 between Ecology and the Ministry provides for the development of subject-specific Memoranda as Appendices to the Memorandum of Understanding

WHEREAS, jurisdiction over water resource allocation of waters of the Province and the State rests, respectively, with the Province and the State, subject to the exercise of any existing applicable aboriginal and treaty rights, in the case of the Province with First Nations as recognized and affirmed in Section 35 of the Canadian Constitution Act of 1982, and in the case of the State with Native Tribes as recognized by the Congress of the United States and by the State of Washington,

WHEREAS, in the exercise of that jurisdiction particular regulatory schemes have been put in place in the Province and the State, and these schemes are administered by provincial and state agencies, the Ministry and Ecology respectively,

WHEREAS, a Memorandum of Agreement was considered to be the most effective means to provide for consultation and information sharing between the Ministry and Ecology on water resource allocation by officials of those agencies, where such allocation has the potential for significantly impacting water quantity across the border

THEREFORE, the Ministry and Ecology enter into this Memorandum of Agreement, hereafter called the MOA

IT IS THE PURPOSE OF THIS MOA TO

1) Define the respective roles and responsibilities of the Ministry and Ecology to provide for timely prior consultation on water quantity allocation permits, and

2) Specify procedures, schedules, and appropriate contacts within each agency to facilitate the timely sharing of the above information

IT IS MUTUALLY AGREED THAT

1 Statement of Work

1 01 The Ministry and Ecology agree, in order to provide for timely consultation between them prior to water resource allocation by officials of those agencies where, in the judgement of the administrating agency, such allocation may have the potential for significantly impacting water quantity on the other side of the border, to

(a) provide information to the other party in accordance with the Scope of Work, which is attached to this MOA and forms part of it, and

(b) consult with the other party

on any licence or permit application for water quantity allocation which if granted, could potentially significantly impact water quantity on the other side of the border

2 Term

2 01 This MOA will take effect commencing on the date this MOA is signed by both parties and will remain in effect for a period of three years, when it shall be subject to review and renegotiation, unless it is terminated earlier by either of the parties

3 Termination

3 01 Either party may terminate this MOA by giving 30 days written notice of termination to the other party

4 General

4 01 This MOA is not intended to constitute a contractually binding relationship between the parties

IN WITNESS THEREOF, the parties execute this agreement

*A duly authorized representative of the Minister of Environment Lands and Parks on behalf of Her Majesty the Queen in Right of the Province of British Columbia*

Name Jos McCulloch

Title Regional Director

Date October 15, 1996

*A duly authorized representative of the Director of the Department of Ecology for the State of Washington*

Name Michael Rudkin

Title Regional Director

Date October 11, 1996

**SCOPE OF WORK**

PRIOR CONSULTATION AND
INFORMATION SHARING
REGARDING WATER RIGHTS ALLOCATION

I Coordination and Cooperation

Water quantity allocation is a cross-border issue Because water resource development on either side of the border can have a significant impact on water availability on the other side, it is imperative that the Ministry and Ecology

*(a)* coordinate reviews to facilitate decision-making on applications involving water rights allocation, where the water allocation applied for has the potential for significantly impacting water quantity across the border, and

*(b)* cooperate in sharing relevant water quantity information necessary to provide management of those water resources

II Elements of Consultation

In addition to the referral procedures normally followed, Ecology's Shorelands and Water Resources Program, Northwest Regional Office Section, will send all surface water, ground water, and reservoir applications for permit and applications for change of water right to the Ministry when the point of withdrawal, point of diversion, or place of use specified in the application is within or on the exterior boundaries of the Abbotsford/ Sumas Aquifer as outlined in the attached plan (1 82,500 scale) Ecology will provide the Ministry a copy of the application form and a copy of the appropriate USGS quadrangle sheet or Metsker map, indicating the location of major project features such as points of diversion, nature of the works proposed, and other information normally submitted with the application All applications will be sent to the Regional Water Manager, Lower Mainland Regional Headquarters, Ministry of Environment, Lands & Parks

In addition to the referral procedures normally followed, the Ministry will send to Ecology all surface water licence applications and water licence amendment applications when the point of withdrawal, point of diversion, or place of use identified in the application is within or on the exterior boundaries of the Abbotsford/Sumas Aquifer as outlined in the attached plan (1 82,500 scale) The Ministry will provide Ecology a copy of the application form and a copy of the appropriate NTS, BCGS or cadastral map, indicating the location of major project features such as points of diversion, nature of the works proposed and other information normally submitted with the application All applications will be sent to the Supervisor, Shorelands and Water Resources Program, Northwest Regional Office, Department of Ecology

Applications which meet the requirements identified above will be transmitted by the Ministry or Ecology to its counterpart at the same time that notice for comment is provided to other interested parties Upon receipt of the application, the Ministry and Ecology will have 30 days for review and comment If necessary, the Ministry and Ecology may request additional time for review and comment on any application

Comments from the Ministry and Ecology should be substantive in nature, i e , they should relate specifically to impairment of the aquifer's safe sustaining yield, impairment of existing rights, or to fish and wildlife biology or habitat impacts Current information, based on a field investigation, is preferred Projected effects should be quantified to the extent possible If either agencies' staff does not fully understand the reviewer's comments, he or she should contact the reviewing agency for clarification When findings significantly deviate from the substantive comments provided by the reviewing agency, a copy of the findings will be provided to the reviewing agency

III Information Sharing

Subject to applicable public disclosure, freedom of information, and protection of privacy laws, the Ministry and Ecology commit to freely sharing and exchanging information on water licences/permits and water licence/permit applications under consideration

Subject to applicable public disclosure, freedom of information, and protection of privacy laws, the Ministry and Ecology commit to freely sharing and exchanging information on regional studies pertaining to water availability and development of water resources within or on the boundaries of the aquifer

Appendix 6

# Cross State Water Agreements, Interstate Compacts, and Transboundary Agreements of the Western United States

There are three ways in which controversies involving waters shared between states can be solved in the United States These are

1 Direct legislation by Congress,
2 A suit by one state against another in the U S Supreme Court,
3 A compact between states, approved by Congress, when necessary
4 Less formal agreements

The first method is limited as Congress has little power to interfere between states Congress is only permitted within its constitutional powers, which are limiting themselves

The second is allowed by Article III, Section 2 of the U S Constitution Each state has the right to seek amends from legal wrongs before the Supreme Court One problem with this course of action is that all problems between states are often not capable of judicial determination Another downside is the difficulty of setting judgments against a state, which is not subject to the laws and actions of another state This usually necessitates Federal arbitration of enforcement

The third method provides for discussions outside of a formal court setting Those knowledgeable in the subjects at hand are able to convene and form a compact, in the hopes that all involved can come to a shared understanding and find a mutually beneficial solution

**********

**Agreenents between Washington and Canada (and other states?)**

1 **Interagency Memorandum of Understanding Between The State of Washington Department of Ecology Eastern Regional Office and The Province of British Columbia Ministry of Environment, Land and Parks Kootenay Region** The purpose of this agreement is to coordinate the actions between the State of Washington and the Province of British Colombia on issues of environmental significance
   - The area of work is the international portion of the Columbia River drainage (the main stem of the Columbia River between Grand Coulee Dam and the Hugh Keenleyside Dam, and the Pend Oreille River within Washington State and British Columbia)
   - Timely notification will be given prior to discharges of water or discharges of land? land, which may have a potential for cross boundary water quality impacts
   - Notification will be given prior to any significant consumptive water use
   - Notification will be given if any significant spills occur to the Columbia River and any of its tributaries
   - Air and water quality monitoring data will be shared between Washington State and the Province of British Colombia

- Washington and British Colombia will coordinate their regulatory actions and share any information, which is necessary to protect the environment
- Washington and BC must notify each other 30 days before the issuance of ny water right for consumptive use of water in excess of 10 cubic feet per second that could affect the stream flow across the border The reviewing agency (which the reviewing agency—the entity not making the water rights decision?) will comment and ---this implies that one state can veto the water right---is that true? make a final decision
- Water drainage basin planning activities may be considered within the area of work described in this MOU

2 **Memorandum of Agreement between whom Related to Referral of Water Right Applications** October 10, 1996 This MOA will remain in effect for a period of three (3) years, at which time it may be reviewed and either renegotiated or terminated Either party may terminate the agreement with a 30 day written notice of termination The purpose of this memorandum is to

- Coordinate decision-making reviews on applications for water rights, when the allocation may impact the water quantity across the border
- Share water quantity information, which will manage the water
- Ecology's Shorelands and Water Resources program from the Northwest Regional Office, will send all surface water, groundwater, and reservoir applications (for permit or for change), to the Ministry, when the point of withdrawal, diversion, or place of use is within the boundary of the Abbotsford/Sumas Aquifer, as described in this Agreement
- The Ministry will send all surface water license applications and amendments to Ecology, when the point of withdrawal, diversion, or place of use is within the Abbotsford/Sumas Aquifer boundary
- Upon receipt of the application(s), Ecology and the Ministry have thirty (30) days for comment and review Comments must relate to the impairment of the aquifer's yield, impairment of existing rights, or to fish and wildlife impacts

3 **Abbotsford-Sumas Aquifer International Task Force** The 1992 Environmental Cooperation Agreement between British Colombia and Washington State created this Task Force to coordinate **groundwater** protection in the aquifer area The Task Force has three working groups Information Development and Coordination, Management of Activities Threatening the Aquifer, and Legislation and Policy Advice The Task Force, thus far, has

- Defined parameters of the aquifer, including its size, shape, catchment area, and hydrologic and Hydrogeologic boundaries
- Determined land use issues
- Identified water resource issues
- Identified health issues
- Received technical data
- Identified educational needs

The Task Force focuses on water quality and quantity issues, and coordination efforts towards protecting the aquifer from contamination There are a number of members of the task force From British Columbia, they are Agriculture and Agri-Fodd Canada,

Environment Canada, Heath Canada, Ministry of Agriculture, Fisheries, and Food, BC Environment, Ministry of Health, Sto Lo Nation (Indian Tribe), City of Abbotsford, Central Fraser Valley Regional District, and Project Enviro-Health From Washington U S Environmental Protection Agency, U S Natural Resources Conservation Service, U S Geological Society, WA Department of Agriculture, WA Department of Ecology, WA Department of Health, WSU Cooperative Extension, Nooksack Indian Nation, Lummi Indian Nation, City of Sumas, and Whatcom County

**Colorado Compacts and Agreements**

Streams leaving the borders of Colorado, directly impact the economics of eighteen bordering states, and the Republic of Mexico Colorado has one-twentieth of its land under irrigation, providing much of the state's economic wealth The state of Colorado is directly involved in nine interstate compacts, two U S Supreme Court decrees, one interstate agreement, and one international treaty

***Colorado Interstate Compacts***

1 **Colorado River Compact** [Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming] November 24, 1922 The purpose of this compact is to secure agricultural and industrial development of the basin, present and future, to ensue the mutual recognition among states of one another's laws, customs, and institutions, and to provide equitable divisions of waters of the Colorado River The important outcomes from this compact are as follows
   - Divides the Colorado River basin into a Lower Basin (California, Arizona, and Nevada), and an Upper Basin (Colorado, Utah, New Mexico, and Wyoming) at Lee Ferry, Arizona
   - Allows each basin 7 5 million acre-feet per year for consumptive use and allows the Lower Basin to increase its consumptive use by 1 million acre-feet per year
   - Mexican allocation comes first from surplus waters above its 15 million acre-feet per year and secondary obligation equally between the two basins
   - States that the Upper Basin will divert 75 million acre-feet in each consecutive 10-year period to the Lower Basin
   - Subordinates navigation use to domestic, agriculture, and power uses, and power use to domestic and agricultural purposes

2 **La Plata River Compact** [Colorado and New Mexico] November 27, 1922 The purpose of the compact is to equally distribute the waters of the La Plata River The compact can be modified or terminated by mutual consent from both states Important provisions include
   - Colorado shall operate two gauging stations on the La Plata River, the Hesperus station and the interstate station near the state line, operated between February 15 and December 1
   - Between these dates each state has full use of water when the mean daily flow of 100 cfs or more passes by the interstate station On all other days Colorado must deliver half of the mean flow at Hesperus to the interstate station for the preceding day, not to exceed 100 cfs Water can be distributed to each state in alternate periods in keeping

with this schedule when the flows are so low that greater beneficial use can be obtained, as determined by state engineers from each state

- Flow at the Hesperus station shall be the river flow at that station with the addition of the amount of concurrent diversions above this station The flow at the interstate station shall be the river flow here plus one-half the diversions of the Enterprise and Pioneer Canals, plus all diversion in Colorado for use in New Mexico

3 **South Platte River Compact** [Colorado and Nebraska] April 27, 1923 The compact attempts to remove all controversy between the states with respect to the South Platte River The compact can be modified or terminated by mutual consent from both states

- The flow of the river is the measured flow at Julesburg in addition to the inflow below this station and the above diversion works of the Western Irrigation District in Nebraska
- The "Upper Section" is the portion of the South Platte in Colorado upstream of the west boundary of Washington County and the "Lower Section" is located between the west boundary of Washington County and the state line
- Logdepole Creek is divided at a point two (2) miles north of the state line Nebraska has exclusive use of the waters of the creek above this point and Colorado has exclusive use below this point
- Between October 15 and April 1, Colorado has full use of all waters in the Lower Section, plus 35,000 acre-feet less the amount diverted by the South Divide Canal under its appropriation date of December 17, 1921 Also between these dates, if the interstate station is below a mean flow of less than 120 cfs, those Colorado diverters junior to June 14, 1897, shall not divert from the Lower Section
- Colorado waives any objections to the diversions of waters in Colorado for use in Nebraska from the Peterson Canal or other canals in the Julesburg Irrigation District
- Any and all deficiencies in delivery of waters from neglect of the state of Colorado shall be made up within 72 hours

4 **Rio Grande Compact** [Colorado, New Mexico, and Texas] March 18, 1938 The compact equally apportions the waters of the Rio Grande above Ft Quitman, Texas, and reviews of nonsubstantive changes in the compact can be considered every 5th year The schedule of the Compact can never be changed as a result of an increase or decrease of the delivery of water to Mexico

- The Rio Grande "Basin" is all territory drained by the Rio Grande and its tributaries in Colorado, New Mexico, and Texas
- The Commission must maintain and operated seven (7) gauging stations
- If the closed basin is used for delivery of water to the Rio Grande, the water cannot contain in excess of 45 percent sodium ions in the total positive ion count, when the total dissolved solids exceed 350 ppm
- Colorado must deliver at Lobatos the sum of the delivery schedules for the Conejos River and the Rio Grande less 10,000 acre-feet
- There can be no increase in reservoir storage constructed after 1929 when there is less than 400,000 acre-feet of usable water in project storage, and during January of any year, the Commissioners from either Texas or New Mexico can release water from

reservoirs constructed after this date in the amount of the accrued debit of either/or of these states

- Delivery credits and debits of Colorado are computed annually, and cannot exceed 100,000 acre-feet except by holdover storage in reservoirs constructed after 1937 Colorado will retain water in storage at all times to the extent of their debit
- If spill occurs in any year, accrued credits are reduced by the credit held by both states and they both do not have delivery obligation When there is spill of usable water, debits are canceled Debits are also reduced proportionally to minimum unfilled capacity of project storage capabilities
- **Legislative declaration – repeal** Affective July 1, 2003, new withdrawals of **groundwater** affecting the confined aquifer system (underlying portions of the San Luis valley) can injure existing water rights and increase the burden of Colorado's scheduled deliveries under this compact Any well permit application involving new groundwater withdrawals that affect the rate and/or direction of water moving in the aquifer system must get a judicially approved plan, which will be given by the state engineer and subject to the requirements of rules made for the withdrawal of such groundwater These rules will be based on a study of the aquifer and made known before July 1, 2003 The state engineer and the Colorado water conservation board will proceed with diligence to complete the needed studies The state engineer will recognize that unappropriated water is not made available and that the resulting reduction of water will not injure the water consumption of nonirrigated vegetation

5 **Republican River Compact** [Colorado, Kansas, and Nebraska] December 31, 1942 The compact provides the most efficient use of waters for many purposes for beneficial consumptive use, and for the control of floods

- Allocation is based on the average, annual virgin water supply in the respective streams
- Kansas allocates on a 190,300 acre-feet per year of beneficial use, Nebraska on 234,500 acre-feet per year, and the Colorado on 54,100 acre-feet (North Fork of the Republican-10,000 acre-feet, Arikaree River-15,400 acre-feet, South Fork of the Republican-25,400 acre-feet, Beaver Creek-3,300 acre-feet, plus all waters of the Frenchman and Red Willow Creeks in Colorado)
- There is no debit or credit system, but readjustment of historical, annual flows can have provisions made on them if they vary more that 10% from those in the compact Reallocations are made on these flows
- An expert from the University of Nebraska said on a scale of 1 to 10, the effect of **groundwater** pumping on the Republican River flows is a 1 **However,** in 1996, an assessment of the relationship between **groundwater** and surface water was initiated, to decide if regulations should be adopted to manage hydrologically connected areas The Nebraska Legislature has given the Natural Resource District (NRD) the authority to temporarily suspend the construction of new wells, which would pump more than 50 gpm This can last no more than five (5) years and can apply to the whole NRD or to a smaller area (i e the aquifer) This would allow for a study of the relationship between the groundwater and surface water to be conducted without further worsening of the problem The suspensions may be lifted after the study was completed It was suggested that the Department of Water Resources receive

$225,000 in each of the next two years to address this subject, and for an additional $330,000 be received for funding a Republican River water management initiative to the Southwest Nebraska Resources Conservation and Development, Inc

6 **Costilla Creek Compact** [Colorado and New Mexico] September 30, 1994 (Amended February 7, 1963) This compact equalizes the division and benefits of the waters of Costilla Creek to place equal basis in both states for the most efficient utilization of water It adjusts the past jurisdictions of the states over irrigation works diverting and storing water in one state for use in both, and provides for integrated operation of existing and prospective irrigation facilities in both states

- The compact defines an irrigation season as May16-Sept 30, and a storage season Oct 1-May 15, prohibiting diversions during the storage season
- Establishes a duty of water of one (1) cfs for each 80 acres of irrigated land
- Provides for a calculation of a safe yield before water delivery each year, establishing schedules of delivery to each state based on the water available
- Involves the relinquishment of Colorado rights and the change of decreed amounts

7 **Upper Colorado River Compact** [Arizona, Colorado, New Mexico, Utah, and Wyoming] October 11, 1948 The compact provides for the equal distribution of waters from the Upper Basin and the obligations of each state with respect to the amounts of water required to be delivered at Lee Ferry by the terms of the Colorado River Compact It also secures the development of the Upper Basin, both agriculturally and industrially The compact states that the waters of the Upper Basin be apportioned as follows Arizona – 50,000 acre-feet per year, and of the total beneficial consumptive use less than the 50,000 acre-feet per year to Arizona, Colorado receives 51 75%, New Mexico – 11 25%, Utah – 23 00%, and Wyoming – 14 00% These percentages are based on the allotments of man-made diversions, and beneficial use is the basis and the limit of the right to use These amounts shall not be exceeded by any state during any water year when it would deprive another state of its use The compact apportions the waters of the Little Snake River between Colorado and Wyoming, the waters of Henry's Fork (tributary of the Green River between Utah and Wyoming), the Yampa River between Colorado and Utah, and the San Juan River system between Colorado and New Mexico

8 **Arkansas River Compact** [Colorado and Kansas] December 14, 1948 The compact equally divides the waters of the Arkansas River between Colorado and Kansas, and the benefits from the construction of the John Martin Reservoir A conservation pool at the reservoir would benefit both states, both upstream and downstream of the dam The Arkansas River would be protected from being depleted in either quantity or availability

- From November 1 to March 31 all water entering the reservoir will be stored up to maximum capacity of the pool, but Colorado can release inflow up to 100 cfs, if there is no waste therefore From April 1 to October 31 all water will be stored except when Colorado users are operating under decreed priorities and when the state demands river inflow release up to 500 cfs, and when Kansas demands inflow release between 500 and 750 cfs, regardless of Colorado releases Simultaneous releases shall not exceed 1250 cfs Separate releases will not exceed 750 cfs for Colorado or 500 cfs for Kansas unless authorized by the Compact Administration When the



6

conservation pool is less that 20,000 acre-feet, Kansas releases will not exceed 400 cfs, or 1000 cfs for concurrent releases
- Kansas is not entitled to releases when Colorado reverts to administering decreed priorities
- Colorado users above the dam are not affected by priorities below the dam when water is available in the pool

9 **Animas-La Plata Project Compact** [Colorado and New Mexico] June 7, 1969 The purpose of the compact is to put into operation the Animas-La Plata Reclamation Project It gives New Mexico the right to divert and store water from these two rivers for users of Project water, providing that the uses are within New Mexico's allocation in the Upper Colorado River Compact

***Colorado Agreements***

1 **Pot Creek Memorandum of Understanding** [Colorado and Utah] April 1, 1958 The purpose of this agreement is to develop equal divisions of waters from Pot Creek between the two states The states agree to appoint a water commissioner to administer within both states, with Colorado paying 20 percent of his/her expenses It establishes a schedule of priorities for the use of water in both states and defines a period (May 1 of each year) before which direct diversions cannot be exercised Both states agree that a Compact would be developed after a workable system is agreed upon

2 **Sand Creek Memorandum of Agreement** [Colorado and Wyoming] March 13, 1939 (Revised August 7, 1997) The agreement agrees to allocate the waters of Sand Creek with the priority water rights in each state It entitles Wyoming water rights to 50 68 cfs prior to the diversions of the Colorado ditches It limits the diversions of the Wilson Supply Ditch and the Sand Creek Ditch to amounts in excess of that allocated to Wyoming In 1997, it was amended to require 40 cfs to be delivered to the state line by Colorado for seven days prior to the start of the irrigation season Afterwards Colorado must deliver 35 cfs, when available to the state line for irrigation, if needed by Wyoming

**Nevada Compacts and Agreements**

***Nevada Interstate Compacts***

1 **California-Nevada Interstate Compact** [Nevada and California] July, 1968 (Ratified by California in September 1970 and Nevada in March 1971) The compact provides for the diversion of the waters of Lake Tahoe, and the Truckee, Carson, and Walker Rivers It created the Tahoe Regional Planning Agency (TRPA) to manage land-use planning and environmental issues in the Lake Tahoe Basin They allow for a maximum annual total diversion from all water sources of 34,000 acre-feet, 23,000 acre-feet per year allocated to California and 11,000 acre-feet per year to Nevada The terms of this compact have been accepted under individual state legislation, but was never ratified by Congress because of a phrase which stated that the waters used by the federal government was to be against the use of the state in which it was made
2 **Colorado River Compact** (described previously)

*Nevada Agreements*

1 **Preliminary Settlement Agreement (PSA)** [Nevada] May 23, 1989 The Pyramid Lake Paiute Tribe of Indians and the Sierra Pacific Power Company came to agreement to store the water rights of the Power Company in federally operated reservoirs along the Truckee River in California when it is not needed for municipal and industrial uses In exchange, excess water in storage is used for fishery purposes, except during times of drought The power company also gives up its right to use single-use hydroelectric flows in the Truckee River

2 **Tahoe-Prosser Exchange Agreement** [Nevada-California] June 1959 Waters released from Lake Tahoe for minimum instream flow, 50 cfs in winter and 70 cfs in summer, and when flows from Lake Tahoe, which are not necessary due to normal flows in the river, can be stored in the Prosser Reservoir to be used and released at other times This water is referred to as "Tahoe Exchange Water"

3 **Tri-Partite Agreement** [Lahontan Valley, Nevada] November 26, 1948 The Stillwater National Wildlife Management area, under this agreement, would be developed, operated, and maintained congruently by the Truckee-Carson Irrigation District, Nevada State Board of Fish and Game Commissioners, and the U S Fish and Wildlife Service

4 **Truckee River Agreement** [Nevada and California] 1935 This agreement gives the basis for the operation and maintenance of the Truckee River and its tributaries between its source (Lake Tahoe) and its finishing point (Pyramid Lake) It provides for operation of storage facilities to satisfy Truckee River diversion rights with priority before 1939 and the building of the Boca Dam and Reservoir It also manages the pumping of Lake Tahoe, by 1) allowing for the beds and banks of Lake Tahoe and Truckee River to be restored to their natural condition, 2) to forbid any additional outlets or removal of water from the lake for irrigation or power, or for sanitary or domestic uses by any means other than gravity Exceptions can be given by the U S Secretary of the Interior or the Departments of Health of the States of Nevada and California There are also a number of dams and reservoirs along the Truckee River, not all operated under the Truckee River Agreement The dams have various ownership, uses, and operational criteria

5 **Truckee River Operating Agreement** [Nevada and California] This agreement helps to further manage the Truckee River in both states and provides drought protection from the Reno-Sparks Metropolitan Area Its other purpose is to make further improvements to the Truckee reservoirs in California, to make improvements for fish and wildlife habitats, increase drought storage capabilities, and allows for the exchange and release of waters from upstream reservoirs for instream flow purposes This reduces spills and creates recreational pools, a water credit system, and additional storage to budget and release waters for power generation It also gives the Reno-Sparks Metropolitan Area incentive to conserve water as it can be put into storage, to save for drought times and for water marketing for private water right holders Increased waters left in the river, increases the spawning potential of the endangered cui-ui, Lahontan cutthroat trout and other species in Pyramid Lake

- The compact gives the states right to use all waters of the basin for domestic and irrigation purposes, as required in a reasonable manner
- Unappropriated waters of the Upper Klamath River Basin can be used for any beneficial use, either by direct diversion or storage for a later use This may be done by any person, following provisions set in the compact
- An order to grant permits for the appropriation of waters will be given Preference will be given to applicants in the following order
    1 Domestic uses
    2 Irrigation uses
    3 Recreation (including fish and wildlife)
    4 Industrial uses
    5 Hydroelectric Power
    6 Other
- Within these rights to use water, a permit will be granted and governed by a priority in time, the date of filing the application and the subsequent completion of construction, and proof of putting the water to beneficial use with due diligence Each state will notify the other state with actions on all applications
- In Oregon, there will be no diversions out of the Upper Klamath River Basin, but there will be allowed out-of-basin diversions of waters coming from the drainage area of Fourmile Lake
- Waters from the Upper Klamath Lake and River, along with tributaries upstream from Keno, Oregon, cannot be used Waste water and return flow within the Upper Basin will be returned to the waters upstream of Keno
- These waters upstream of Keno will not be taken outside of the Upper Klamath River Basin for use in California
- All domestic and irrigation rights given after the date of the compact will be superior to all rights after the effective date of the compact for all waters used outside the Klamath River Basin in California or for any other purpose of use within the Basin These rights are considered "superior", but the right to use these waters in California will be limited to the water necessary for 100,000 acres of irrigated land, and 200,000 acres in Oregon
- The right to store water for a later use will not be affected, as long as it does not interfere with the storage or diversion of water to be used for domestic use or irrigation within the Basin
- In terms of hydroelectric power, both states will strive to provide the most beneficial distribution of water, by using water to obtain the lowest power rates, along with the reasonable use for irrigation and pumping from wells
- Each state is allowed to construct storage and measuring facilities, and diversions of waters in one state for use in the other These must be approved by the Commission
- Each state must operate and maintain gauging stations along rivers or reservoirs and required by the Commission, for recording the quantity of water diversions These will operate at all times, measure flows at USGS standards, and be made available to the public
- Each state is allowed to purchase property in the other state for diversion, storage, or measurement of water, subject to the laws of that state

- Each state will recommend standards for quality of waters in the Basin, and subsequent corrective action should pollution occur
- Nothing in the compact may wrongly affect the rights of any Indian tribes and their rights to use the waters in the Basin for irrigation or any other rights given under federal treaty

**Wyoming Compacts**

1 **Upper Niobrara River Compact** [Nebraska and Wyoming] October 26, 1962 The purpose of the compact is to equitably apportion the available surface water supply of the upper Niobrara River Basin between the states and to provide for acquiring information on groundwater and the groundwater flow necessary for apportioning this water

- **Surface Water** Wyoming has no restriction of use of the surface water in the Upper Niobrara River, *except*
  1 After 8/1/1957, no reservoirs can be constructed to exceed the capacity of 20 acre/feet and be used only for domestic or stock watering purposes
  2 Storage reservoirs construction after this date from the main stem of the Niobrara River, and located East of Range 62 and West of the 6th p m or from the main stem of the Van Tassel Creek, and located South of T 32 N , R 60 W , Sec 27 of the 6th p m , can not store more than 500 acre/feet in any water year (Oct 1-Sept 30) Reservoirs constructed before this date and of the same source of water and from the same locations may only be made from Oct 1-June 1, and from June 1-Sept 30 when water is not needed to meet the requirements by flow appropriations in Wyoming and Nebraska The quantity of storage is limited to the capacity as shown in the Wyoming State Engineer's Office unless additional storage water becomes available
- **Groundwater**
  1 Any allotment of **groundwater** in the Niobrara River should be postponed until data is gathered on the groundwater of the basin The USGS and the States of Nebraska and Wyoming will lead the study It will be agreed upon by the state engineer of Wyoming and the director of Water Resources of Nebraska The data can include that from observation wells and costs for the study may be financed between the USGS and the states (equally between the two states)
  2 The groundwater study will begin within one (1) year after the date this compact goes into effect After data has been collected for not more than one (1) year, the two states and the USGS will collectively make analysis of the data to determine the groundwater availability, and supplement this information into the compact If it is decided that groundwater is not desirable or necessary a re-analysis will be made, not to exceed two (2) year intervals
  3 When it is determined that groundwater in the Niobrara River Basin is desirable, the two states will negotiate a supplement to the compact to address the appropriation(s) of groundwater
  4 The supplement addressing groundwater, if made, will not become affective until it is approved by both states and ratified by the legislature

2 **Belle Fourche River Compact** [Wyoming and South Dakota] 1943 This compact provides equitable division of the waters of the Belle Fourche River and all of its tributaries in South Dakota and Wyoming, and promotes efficient uses of water and flood control

- Each state shall have an official who is in charge of overseeing the public water supplies and collecting data necessary for administering the conditions of the compact Rules and regulations may be adopted by these officials to the compact, by a unanimous vote
- The USGS or other such federal agency, will assist the officials of the state in the collection, correlation, and publication of data and information in conjunction with the compact
- Gauging stations will be established and maintained in each state
- All unappropriated waters of the Belle Fourche River will be allocated as Ninety percent to South Dakota, and ten percent to Wyoming
- Wyoming's allocations shall only be used for domestic and stock watering uses, with unrestricted use, and reservoirs may not exceed twenty (20) acre-feet in capacity Wyoming can purchase or may construct reservoirs not to exceed ten (10) percent of the total storage capacity for irrigation in South Dakota Either state may temporarily divert or store water, which is an unused amount of the percentages given
- Any person or state may purchase property in another state for the construction and maintenance of storage reservoirs, canals, and conduits In doing so, they must pay the political subdivision of the state, each year, money equal to the amount of taxes on the land and for improvements done on the land during the preceding ten (10) years of the use of the land
- Either state may file applications to construct dams, reservoirs, or diversion works in the other state, with subject to the other state's control and regulation of the water used
- Appropriations made after the date of the compact may be subject to adjudication in the state where the water is diverted or stored, or where land is irrigated in the other state
- No reservoirs built after the date of this compact to hold water to be used in Wyoming cannot exceed a capacity of one thousand (1,000) acre-feet

3 **Bear River Compact** [Wyoming, Idaho, and Utah] December 22, 1978 The purpose of this compact is to remove future controversies of water distribution of the Bear River, to provide water use for multiple purposes, and to allow for further development of the waters of the Bear River between the states

- An interstate administrative agency was created to exercise the powers of the compact Three commissioners from each state and a chairman (without a vote, representing the United States of America) are appointed A vote of at least two-thirds is necessary for action to be made by the commission
- During a water emergency, when the flow for the upper division is below 1,250 second-feet The water will be apportioned as 1) Upper Utah section diversion, 0 6 percent, 2) Upper Wyoming section diversion, 49 3 percent, 3) Lower Utah section diversion, 40 5 percent, 4) Lower Wyoming section diversion, 9 6 percent

- The remaining water, which has not been allocated in the lower division of Idaho and Utah, may be apportioned for use in Idaho and Utah in this matter 1) Idaho has the first right to use the water, not to exceed 125, 000 acre-feet a year 2) Utah has second right, with no more than 275,000 acre-feet a year 3) After this is satisfied, the two states have an additional right to 75,000 acre-feet a year on an equivalent basis 4) Any remaining water can be divided to Idaho, thirty-percent, and Utah, seventy-percent
- Water may be stored annually above Stewart Dam, not to exceed 35,500 acre-feet from the Bear River, and on the Thomas Fork for use in Idaho, not to exceed 1,000 acre-feet Additional water may be stored above Stewart Dame by Wyoming and Utah, for 70,000 acre-feet a year to be divided equally, and by Idaho for 4,500 acre-feet a year
- Water or other stored water from another watershed may be turned into the channel of the Bear River, and the same amount of water may be taken out of the Bear River in another state, either below or above the point where the water is put in the channel Exchanges must not impair existing rights
- Water rights, including **groundwater** tributary to Bear River, applied to beneficial use after January 1, 1976, can not result in an increase in depletion of the Bear River flow and its tributaries above the Stewart Dam of more than 28,000 acre-feet a year, in excess of the depletion as of this date
- A portion of the water in Bear Lake, when below 5,912 91 feet in elevation, shall be reserved for irrigation Additional storage in acre-feet, ranging from 5,000 to 36,000 acre-feet will be reserved, dependant upon the lake surface elevation, as given by the Utah Power and Light Company Bear Lake datum After release of water for irrigation, the water may be used for generating power, and not before, except during an emergency
- Each state may use the water, including **groundwater**, for domestic and stock water, and may have storage capacities not to exceed 20 acre-feet
- Any water rights obtained acquired out-of state will be subject to the laws of that state, and pay a sum of money equal to the average amount of annual taxes on that land or other taxable facility
- Nothing in the compact may affect the rights of the Indian Tribes, or affect any right or power of the United States

4 **Snake River Compact** [Wyoming and Idaho] October 1945-1949 This compact focuses on finding the most efficient and equitable use of waters of the Snake River and to promote the control of floods

- For storage and direct diversions, Idaho is allocated ninety-six percent of the waters of the Snake River, and to Wyoming, four-percent
- Of Wyoming's four-percent, one-half may be used for diversion or stored without a provision made for replacement storage space, and the other half may be diverted or stored for later diversion (with the condition that a reimbursement of Idaho users replacement storage space of one-third of the maximum annual diversion in acre-feet but not to exceed one-third of half of Wyoming's total allocation
- The amount of water subject to allocation is determined on the water measured annually from October 1 through September 30, and the amount of water which

passes the Wyoming state line in the Snake River is determined by gauging stations
- Stock water reservoirs may not exceed twenty (20) acre-feet
- No water may be diverted by Wyoming for use outside the drainage area of the Snake River except with the approval of Idaho No water diverted by Idaho of any tributary of the Salt River may be used outside the drainage area without the approval of Wyoming
- The Snake River's water may be used for electrical power, but is secondary to the waters uses for domestic, stock, and irrigation Water used and impounded by Wyoming for electrical power is not charged against the state from its four-percent allocation
- Gauging stations will be established, operated, and maintained where the two states deem them necessary The USGS or other federal agency may help in the collection, correlation, and publication of data collected
- Either state my apply to construct any dam, storage reservoir, or diversion works in the other state to conserve or regulate its water allocation and to perfect rights, complying with the other states laws and regulations
- If a reservoir is constructed in one state where it is used in the other state, five (5) cubic feet per second will be released at all times for stock water and conservation of fish and wildlife, when necessary
- Nothing in the compact applies to water within the Yellowstone National Park or the Grand Teton National Park, or to any Indian Tribes

5 **Yellowstone River Compact** [Wyoming, Montana, and North Dakota] December 8, 1950
- No commission or administrative body has been created to administer this compact There is one representative from each state and one from a federal agency (without vote) who will administer the compact
- Of the unappropriated waters of the Yellowstone and its tributaries, each state is allocated a certain percentage of water from each stream
- Points of measurement on each stream will be below the last diversion
- The quantities of percentages allotted to each state are the sum of the total diversions allowed above the points of measurement are established after January 1, 1950 during the time from October 1 to that given date, the net change in storage in all of the reservoirs in Wyoming and Montana above the points of measurement, and the quantity of water passing the point of measurements
- All rights put to beneficial use before the date of the compact will remain unimpaired by the compact
- Existing and future domestic and stock water uses are exempt from the provisions in the compact, as long as any reservoirs for stock water do not exceed twenty (20) acre-feet
- Any state may apply for a permit to construct a dam, storage reservoir or diversion works in an upper state, by compliance with the laws of the upper states
- Appropriates made after the date of this compact, may be adjudicated in the state the water is diverted

- No water will be diverted from the basin without the consent of all states

**Other Compacts**

1 **Big Blue River Compact** [Kansas and Nebraska] January 25, 1971 The Big Blue River is a tributary to the Kansas River, and drains an area of 9,696 square miles in south central Nebraska and North Central Kansas Nearly 75 percent of the basin is in Nebraska and 25 percent is in Kansas

- An Interstate Administrative Agency has been created to administer the compact, with one (1) ex officio member and one advisory member from each state, plus a federal member (with no vote) to be appointed by the president, if desired The advisory members have a term of four (4) years, and the administration shall meet once a year, publishing an annual report of its activities and financial status
- Stream-gauging stations, **groundwater** observation wells, and any other data collection facilities will be established and data gathered for a period of not less than five years This will help evaluate the effects of pumping wells
- All local, public, or private agencies who collect water data or maintain and operated water projects or facilities in the basin shall keep the administration aware of its information
- Both states may include storage facilities for low-flow regulation and will release water from storage for low-flow regulation and make it available in the stream
- Nebraska has unrestricted use on the waters in the Big Blue River Basin
- From May 1- September 30, Nebraska will regulate diversions from streams in the basin from water rights junior to November 1, 1968, and will maintain minimum daily flows at the state line gauging station
- When regulation is required to maintain minimum flows, Nebraska will limit diversions by priority dates (including rights to store water) from diversions from the streams and withdrawals of water from irrigation wells installed after November 1, 1968 in the alluvium and valley side terrace deposits
- Storage reservoirs in Nebraska may not exceed 200,000 acre-feet in the Little Blue River Basin, and will not exceed 500,000 acre-feet in the Big Blue River Basin Exclusive of this rule, are storage reservoirs less than 200 acre-feet from sedimentation and flood control, to accomplish low-flow improvement, and for fish and wildlife or recreation purposes
- Kansas has unrestricted use of waters of the Big Blue River Basin
- Each state will partake in efforts to control water pollution within each state
- Neither state may require the other state to provide water for water quality purposes
- The right of the state of Kansas to store water in the Big Blue and Little Blue basins of Nebraska for regulating water will never be denied

2 **Sabine River Compact** [Louisiana and Texas] January 26, 1953

- Texas has free and unrestricted use of waters of the Sabine River and its tributaries above the Stateline However, no permits from either state will be authorized after January 1, 1953, if the flow at the Stateline will be reduced to less than 36 cubic feet per second
- All free water in the Stateline reach will be equally divided by the two states

- Reservoirs constructed after January 1, 1953 above the Stateline must be liable for their share of water to provide the minimum flow of 36 cfs No reservoir will be responsible for a greater share of water contribution
- Reservoirs construction below the Stateline after this date, that amount of water will be deducted from that State's share of the waters in the Sabine River
- All water used for domestic and stock watering is excluded from the apportionment of waters of the Sabine River
- Neither state has the authority to construct a dam in the Stateline reach without consent from the other state
- Both states will appoint two members from each state and a representative from the United States (without vote), to be members of the "Sabine River Compact Administration" They will be responsible for adopting rules and regulations and administering the rules of the compact They will also be responsible for all collection and analyzing of any data, maintaining gauging stations, etc

3 **Canadian River Compact** [New Mexico, Texas, and Oklahoma] December 6, 1950

- All rights to waters of the Canadian River which have been perfected by beneficial use are recognized in this compact
- New Mexico has unrestricted use to all water in the basin above Conchas Dam They also have unrestricted use below the dam, provided that storage in New Mexico available for this water is limited to 200,000 acre-feet
- Texas has unrestricted use to the waters of the River in Texas, except The right to store waters from the North Canadian River are limited for municipal uses, household and domestic use, stock watering, and irrigation for the purpose of providing food and feed for people and livestock actually on the property Until Oklahoma provides conservation storage of 300,000 acre-feet, the right of Texas to store water will be limited to 500,000 acre-feet After this is met, Texas will be allowed an aggregate quantity of 200,000 acre-feet, plus whatever amount is in storage in the reservoirs in the basin of the River in Oklahoma
- Oklahoma has unrestricted use of all waters in Oklahoma
- The commission may allow Texas and New Mexico to store water more than the amount set in the compact, provided that no State's water will be impaired for beneficial use
- The commission created to administer the compact will employ other personnel needed to perform the functions of the compact, enter into contracts with Federal agencies to collect and interpret data, and establish stream and other gauging stations

4 **Red River Compact** [Arkansas, Louisiana, Oklahoma, and Texas] 1978 The Red River Compact Commission has nine members - two from each of the four states and a federal representative (non-voting member) appointed by the United States While provisions state how much water each state is allowed to develop or store, the compact generally provides for an orderly manner to distribute the water, to avoid litigation Annual meetings address quality and pollution problems, as well as quantity and development issues

- Each state may use the water for any beneficial use, determined by each state, but subject to the availability of waters in that state

- Any state storing water from the basin will be subject to an appropriate reduction to the amount of water which may be withdrawn
- Failure to use any portion of water allocated to the state will be subject to relinquishment
- Each state may construct storage facilities, replace storage capacities made unusable due to sediment storage, construct storage facilities for flood and sediment control, and use the bed and banks of the river to convey stored water
- Livestock and domestic uses are not included in the compact, and no impoundment of water will exceed 200 acre-feet
- The Red River is divided into five (5) reaches, and apportioned according to the reaches
- Each state is responsible to take appropriate action towards preventing, diminishing, and regulating all pollution sources which affect the Red River Basin

5 **Caddo Lake Compact** [Louisiana and Texas] January 26, 1979 This compact augments and amplifies the Red River Compact

- The appointed Red River Compact Commissioner and a local commissioner will administer the provisions of this compact
- Texas and Louisiana have agreed to equitable apportionment and use of the water of Caddo Lake
- Both states recognize a need to raise the spillway elevation of Caddo Lake to an elevation of 170 5 feet above sea level, to enhance the water resource and recreational potentials
- No diversions or consumptive use of the lake will be made when the water of Caddo Lake falls below 167 5 feet above mean sea level Any water user diverting more than 1,000 gallons per day at this time must submit water use plans to the Caddo Lake Commission, who will approve or deny such a diversion The commission will give priority to domestic and municipal uses
- Also when the lake falls below 167 5, no state will divert more than 1,000 acre-feet per month, or 3,000 acre-feet during any two consecutive months (not applying to any municipalities, or political subdivisions during an emergency)
- Either state may divert water from the lake when water spills over the spillway at 168 5 feet above mean sea level When it is not spilling at this level, the total use by each state will not exceed 8,400 acre-feet
- Neither state will divert more than 3,600 acre-feet during one month, or 4,800 acre-feet during any two consecutive months
- Whenever the lake is spilling over the spillway level, both states may divert without restriction
- If each state obtains 50 percent of the water above 168 5 feet above mean sea level, each state may divert 16,800 acre-feet during a drawdown period

6 **Pecos River Compact** [New Mexico and Texas] December 3, 1948

- New Mexico cannot deplete the flow of the Pecos River at the New Mexico-Texas state line, which will give to Texas a quantity of water equal to the available water to Texas under the 1947 condition

- The beneficial consumptive use of waters of the Delaware River is given to Texas
- The beneficial consumptive use of waters in New Mexico is apportioned 43 percent to Texas and 57 percent to New Mexico
- Water recovered and not use for a beneficial purpose is apportioned to New Mexico, but not diminished the amount of water flowing into Texas under the 1947 condition
- Any water salvaged in Texas, is allotted to Texas
- Use of unappropriated flood waters is allotted 50 percent each to the two states
- Each state will strive to eliminate nonbeneficial uses of water, and find a way to alleviate the salinity conditions of the river
- Each state may construct reservoirs for salvaging unappropriated flood waters, and to make more efficient uses of water
- Texas may construct water storage facilities in New Mexico, if approved by the Commission
- The Commission, may create and maintain gauging stations, study the water supplies of the basin, and perform all functions necessary in carrying out the rules of the compact

## Reference:

http //ndwr state nv us/ State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, Nevada Division of Water Planning, Nevada State Water Plan, Part 1 – Background and Resource Assessment, Section 8 Glossary on Selected Water-Related Decrees, Agreements and Operation Criteria

http //ssl csg org/compactlaws/master98 pdf Interstate Compacts & Agencies 1998

www statesnews org Your one link to the States – States News, The Council of State Governments

http //www wrd state or us/index shtml State of Oregon Water Resources Department Chapter 542 – Water Resource Surveys and Projects, Compacts, 2001

http //water state co us/ Colorado Division of Water Resources A Summary of Compacts and Litigation Governing Colorado's Use of Interstate Streams, 2000

http //www state co us/gov_dir/leg_dir/olls/s12001/sl 67 htm An Act Concerning the Continuation of an Augmentation Requirement for New Withdrawals of Groundwater Affecting the San Luis Valley Confined Aquifer System Chapter 67 Water and Irrigation

http //www az gov/default htm Arizona Department of Water Resources (ADWR)

http //wwwdwr water ca gov/ California Department of Water Resources

http //legisweb state wy us/statutes/titles/title41/c12a01 htm The Bear River Compact

http //legisweb state wy us/statutes/titles/title41/c12a07 htm The Upper Niobrara Compact

http //www nrc state ne us/nrcnews/spring97/page1 html Republican River Negotiations with Kansas, "Republican River Negotiations with Kansas Come to a Halt" 1997

http //legisweb state wy us/statutes/titles/title41/c12a02 htm The Belle Fourche River Compact

http //legisweb state wy us/statutes/titles/title41/c12a01 htm The Bear River Compact

http //legisweb state wy us/statutes/titles/title41/c12a05 htm The Snake River Compact

"Interagency Memorandum of Understanding Between The State of Washington Department of Ecology Eastern Regional Office and The Province of British Columbia Ministry of Environment, Land and Parks Kootenay Region " May 7, 1992

"Memorandum of Agreement Related to Referral of Water Right Applications" Appendix to April 12, 1996 British Colombia/Washington Memorandum of Understanding, between the State

of Washington, as represented by the Department of Ecology, and the Province of British Columbia, as represented by the Minister of Environment, Lands and Parks October 10, 1996

http //wlapwww gov bc ca/wat/aquifers/absumas html Abbotsford-Sumas Aquifer International Task Force
http //ssl csg org/campactlaws/ksnebigblueriver html Waters and Watercourses, Interstate Compacts and Agreements, Kansas-Nebraska Big Blue River Compact January 25, 1971

http //www capitol state tx us/statutes/wa/wa0004300 html Canadian River Compact

http //www capitol state tx us/statutes/wa/wa0004700 html Caddo Lake Compact

http //www oscn net/applications/oscn/deliverdocument asp?id=97778&hits= Red River Compact

http //ssl csg org/compactlaws/pecosriver html The Pecos River Compact

http //legisweb state wy us/statutes/titles/title41/c12a06 htm The Yellowstone River Compact

Appendix 7

# COORDINATION MECHANISMS FOR THE CONTROL OF INTERSTATE WATER RESOURCES A SYNTHESIS AND REVIEW OF THE LITERATURE

Task 2 Report of Phase 1 of the ACT/ACF Comprehensive Study


prepared by

Douglas S Kenney, Ph D


for the

Advisory Commission on Intergovernmental Relations
State of Alabama
State of Florida
State of Georgia
U S Army Corps of Engineers

1994

# COORDINATION MECHANISMS FOR THE CONTROL OF INTERSTATE WATER RESOURCES A SYNTHESIS AND REVIEW OF THE LITERATURE

## Introduction

Every major river basin in the United States is either international, interstate, and/or substate, no basin conforms exactly to the contours of a state boundary As a consequence, water resources administration in the United States has been characterized by multijurisdictional conflicts from the first days of the Republic In fact, the calling of the Constitutional Convention was, in large part, prompted by concerns over how navigation policies affected interstate commerce (Fox, 1964, Cooke Commission, 1950) Over the past two centuries, several types of "coordination mechanisms" in dozens of river basins have been proposed and implemented to address the unique challenges posed by interstate water resources Nonetheless, the institutional realm between state and nation is still largely virgin territory, within which the limits of legal and political feasibility in the federal system can be further explored Regional water organizations have been among the most prominent of these institutional pioneers, prospecting for arrangements that efficiently reconcile area and function, while equitably combining authority and accountability

The effective governance and management of interstate water resources is a multifaceted challenge Consequently, scholars representing several different disciplines have made contributions in this subject area, providing a vast--yet largely unsynthesized--body of literature typically classified under the heading "river basin administration " Most of the comprehensive investigations in this subject area have been conducted and published by special federal study commissions, while books and journals originating in the fields of public administration, political science, natural resources law, and water resources management provide numerous useful case studies and more narrowly-focused subject overviews

Some of the more familiar and influential federal (or federally sponsored) reports include the reports of the Inland Waterways Commissions (1907-1912), the report of the President's Cabinet Committee on Water Flow (1934), the "regionalism" report of the National Resources Committee (1935), the Hoover Commission (1949, 1955) reports on bureaucratic reorganization, the report of the President's Water Resources Policy Commission (1950), the report of the President's Advisory Committee on Water Resources Policy (1956), the report of the Senate Select Committee on National Water Resources (1961), the report of the Water Resources Council (1967) addressing alternative institutional arrangements for river basin management, the Advisory Commission on Intergovernmental Relations' reports on multistate regionalism (1972) and coordinated groundwater-surface water management (1991), the final report of the National Water Commission (1973), as well as the commission's numerous background studies[1], and the General Accounting Office's (1981) review of federal-interstate compacts Among the more worthwhile studies emerging from the academic community include those by Powell

[1] Among the more useful coordination mechanism studies sponsored by the NWC are those by Muys (1971) Hart (1971) and Ingram (1971)



2

(1890), Martin et al (1960), Selznick (1966), Teclaff (1967), Voight (1972), Derthick (1974), North, Dworsky and Allee (1981), Foster (1984), Donahue (1987), and Dworsky, Allee and North (1991)

In the following pages, this broad body of literature is synthesized and reviewed in order to provide a general understanding of the experiences and lessons gained from the American history of river basin administration, with special emphasis given to the specific challenges associated with the creation and utilization of interstate coordination mechanisms This information is presented in a manner designed to aid and support further experimentation in this field, a challenge currently on the public policy agenda in the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint (ACT-ACF) River Basins (Vest, 1993, Erhardt, 1992)

## Coordination Mechanisms An Overview

### The Challenge Posed by Fragmented Institutions

Cairns and Crawford (1991), among others, have argued that achieving integrated environmental management requires a holistic (systems-oriented) viewpoint and coordinated action, yet agencies, congressional committees, academic institutions, professional disciplines, political processes, budgeting practices, media coverage, and so on, are all highly reductionist and conducive to fragmentation For many decades, the literature of river basin administration has discussed this phenomenon of "institutional fragmentation," often leading to proposals advocating the creation of monolithic and centralized water organizations In the modern era, this institutional remedy is no longer widely endorsed, instead, most current reform efforts are primarily designed to provide linkages among major actors and decision-making forums within otherwise unaltered institutions This change in attitude reflects a belief that the fragmentation observed within water institutions is not inherently undesirable, but is simply a sociopolitical characteristic that must be understood and accounted for in the design of regional arrangements for water governance, administration and management Coordination mechanisms come in a variety of forms and are asked to perform an assortment of functions, but ultimately, each is expected to address this phenomenon of institutional fragmentation [2]

The fragmentation of authorities, responsibilities and water resource programs among agencies with divergent jurisdictions, mandates, and functional interests can create many familiar and undesirable problems These problems typically feature hydrologic, economic, legal and political dimensions The "hydrologic" consequences of fragmented water resource management are among the easiest to understand, and are succinctly summarized below by Teclaff (1967 11-12)

---

[2]Light and Wodraska (1990) report that at last count water resources management responsibilities at the federal level were apportioned among 18 federal agencies in seven departments and seven independent agencies operating approximately 25 major water resource programs funded by approximately 70 appropriations accounts These efforts are overseen by 23 congressional committees and subcommittees When combined with over 100 interstate organizations and countless state and local organizations the total number of agencies involved in water management easily exceeds 100 000



3

> Climate, topography, soils, and vegetation combine to maintain the river in a state of delicate equilibrium If there is a change in any of these factors the entire river system, from the mainstream to the smallest tributary, reacts at once to restore that equilibrium, through adjustments in volume, rate of flow, discharge, sediment load, and quality of waters

Technically oriented disciplines such as watershed management and water resources engineering can provide guidance in resolving problems of a strictly hydrologic nature, however, as Lord (1984), the Advisory Commission on Intergovernmental Relations (1991), Fox (1976), Frederick (1986), Viessman (1988), Ostrom (1990), Light and Wodraska (1990), and innumerable other authors have argued, addressing the economic, legal and political deficiencies associated--in both a cause and effect manner--with fragmented water programs primarily requires an examination of the design and functioning of water resource institutions

The literature on interstate water resources identifies at least five different factors which promote fragmentation in water institutions (1) political jurisdictions, (2) branch of government, (3) functional interests, (4) legal doctrines, and (5) ideologies Understanding the causes and consequences of these sources of fragmentation is essential to the design of effective coordination mechanisms

1 Political Jurisdictions The most familiar of these sources of fragmentation is the fact that water resources (and their watersheds) generally transcend multiple political jurisdictions, creating numerous opportunities for the generation of "externalities"--i e , undesirable side-effects of water use, such as pollution or depletion of the water supply "Symmetric" externalities, such as the classic "common pool resource" (CPR) situation, are associated with arrangements that provide all parties with the incentive to exploit a resource (before their "competitors" can), leading to detrimental impacts that ultimately harm all parties Resolving symmetric externalities through institutional reforms can be relatively simple, due to the existence of positive-sum solutions (Ostrom, 1990, Taylor, 1992, Gregg et al, 1991)[3] Improving water management at the river basin scale, however, often requires reforms that address "asymmetric" externalities--i e , situations in which externality generators (usually upstream parties) create problems borne primarily by other (usually downstream) parties Resolving asymmetric externalities through institutional reform is considerably more difficult than in the symmetric case, since the externality generators (typically upstream interests) often have no compelling incentive to surrender their favored status under existing arrangements

---

[3]The classic CPR example dealing with multijurisdictional water resources is the rapid depletion of shared groundwater basins by parties fearful that water conservation on their part will only provide increased opportunities for profitable water consumption on the part of their competitors Resolving symmetrical externalities requires providing mechanisms for addressing and resolving conflicts at the scale of the hydrologic region leading to policies that reconcile individual and collective incentives As Ostrom (1990) and others have documented there are generally three institutional strategies for achieving these goals (1) the creation of a centralized government entity at the problemshed level, (2) the privatization of resources and (3) the creation of regional cooperatives in which decisions are collectively made by resource users In addition to Ostrom (1990) the pros and cons of these three options (in the context of water resources) are discussed by many other authors including Wandschneider (1984) Anderson (1983) and Powell (1890) The literature of public administration also features many investigations of this general issue

2 Branch of Government In addition to apportioning powers among the state and federal governments, the American political system--at each of these levels--apportions power among the branches of government the legislative, the judicial, and the executive (It is sometimes argued, with good reason, that the "bureaucracy" represents a fourth branch of government ) Important water policy decisions are made at each of these branches of government, a phenomenon that encourages forum-shopping behavior, while hindering efforts at integrated water management (Goldfarb, 1993a, Light and Wodraska, 1990) In the context of interstate rivers, the competition between the executive and congressional branches--discussed in more detail in later sections--is particularly noteworthy

3 Functional Interests Another major source of "institutional fragmentation" is derivative of bureaucratic competition and specialization With few exceptions, the jurisdiction of natural resource agencies are not defined in terms of geography--although each agency certainly has a geographic limit on its scope of authority--but are defined in functional terms, such as water supply development, water quality management, wildlife protection, water resource monitoring, flood control, forest management, soil conservation, and so on (Clarke and McCool, 1985) In turn, each agency cultivates a supportive constituency based upon the particular functional interest This form of specialization can hinder the development of regionally integrated policies, as evidenced by the historically poor job of integrating land management and water management programs, water quantity and water quality responsibilities and programs, and policies for the joint control of surface water and groundwater (Lord, 1982, ACIR, 1991)

4 Legal Doctrines In some regions, differences in legal doctrines regarding water exist among states (or other jurisdictions) sharing a common water resource This can increase the difficulty of informally achieving interjurisdictional comity, as well as impeding efforts to formally apportion resources and management authorities in those basins where the question of interstate apportionment remains unresolved Within jurisdictions, divergent legal doctrines for surface water and groundwater are often a major source of fragmentation, a subject recently explored in detail by the Advisory Commission on Intergovernmental Relations (1991) Another factor occasionally fragmenting water resource programs both within and between jurisdictions involves the presence of federal lands, which are now--due to modern interpretations of the Property Clause--vested with "federal reserved water rights," a system of water rights which can be difficult to reconcile with both state and interstate doctrines featuring quantified appropriation rights Reserved water rights, along with other emerging federal regulatory rights in water, probably have the most potential for disrupting water management regimes in the western states (Kenney, 1993, MacDonnell, 1987)

5 Ideologies Perhaps the least appreciated source of "institutional fragmentation" involves the presence of incompatible ideologies about what constitutes good public policy and proper resource use When divergent ideologies form the basis of different agency mandates and programs, it is extremely difficult to expect any water institution (or coordination mechanism) to produce water management regimes which are internally consistent and integrated (Feldman, 1991) Given the wide variety of uses and values associated with water resources, it is likely that divergent ideologies will always be among the major sources of institutional fragmentation, nonetheless, processes which encourage

the exchange of ideas and the consideration of multiple values offer the promise of increasing the level of holism in regional water management efforts For this reason, Harrison (1986), Fox (1976), Lord (1984), and Kenney (1993), among others, strongly suggest that new coordination mechanisms should primarily be designed from a "process orientation"--i e , be designed to satisfy criteria such as public participation, value pluralism, and democratic decision-making--rather than being constructed to pursue specific pre-determined management outcomes

General Forms of Coordination Mechanisms

The creation and utilization of coordination mechanisms is a typical response to the problems associated with fragmented water institutions While the term "coordination mechanism" can be defined to include specific agreements, strategies, and programs utilized to promote a holistic approach to water management, the term is generally utilized to describe the institutional arrangements utilized to create and/or implement these regionally focused approaches to regional water governance and administration At the heart of these arrangements are regional water organizations, a highly diverse collection of institutional experiments operating in the politically hostile and legally uncertain realm between state and nation (Derthick, 1974, Ingram, 1973)

In order to perform a systematic investigation into the merits of various types of coordination mechanisms, it is highly useful to utilize some kind of typology which allows the wide diversity of specific organizations to be classified into a manageable and analytically useful number of categories Several criteria can be used to distinguish among the various types of coordination mechanisms observed in practice Organizational morphology, legal foundation, jurisdictional membership, functions, authorities, and combinations thereof, provide the most obvious points for comparisons Donahue (1987), the Water Resources Council (1967), Hart (1971) and Fox (1964) all offer useful typologies based on "structural" criteria, including legal foundations and organizational memberships The scheme offered by Martin et al (1960) is also primarily structural in nature They utilize the public/private sector criterion as the point of demarcation, distinguishing between "government corporations" which "operate in a domain between the private and public sector," and those other organizations which utilize the "regular machinery of government"--such as basin organizations within federal or state departments and interagency committees Derthick (1974) and Teclaff (1967), in contrast, both offer schemes based on "functional" criteria, distinguishing between organizations with "soft" management roles (e g , advisory and advocacy functions), and those with "hard" management roles (e g , construction and regulation) While both structural and functional schemes are adequate for descriptive purposes, it is the interplay of these two parameters that is ultimately the most important consideration in the evaluation and design of coordination mechanisms [4]

In this chapter, a typology is utilized that emphasizes two primary criteria legal foundation, and jurisdictional membership These two "structural" factors primarily determine who is involved in the operation of the mechanism, and what types of authorities and resources are potentially available to the participants This approach leads to the

[4]The typology of institutional arrangements provided by Donahue (1987) in his study of the Great Lakes institution is probably the most exhaustive and academically rigorous available covering 15 different types of arrangements dealing with intrastate interstate and international water resources



6

identification of at least seven distinct forms, grouped into three jurisdictional classifications (1) the interstate approaches, which includes interstate compacts (and their *compact commissions*) and *interstate councils*, (2) federal-interstate approaches, which include *basin interagency committees*, *interagency-interstate commissions*, and *federal-interstate compact commissions*, and (3) federal approaches, including the *federal regional agency*, and the *single federal administrator* arrangement [5] Collectively, these seven categories cover virtually all major interstate experiments in regional water resources governance and administration Each of these seven forms is briefly summarized in the following paragraphs [6] This brief overview is then followed by a detailed review of the conditions, locations, and eras associated with the application of these mechanisms in American river basins Only by understanding the broader institutional context in which these experiments have taken place can their true significance be understood

1 Interstate Compact Commissions As discussed in detail in Muys' (1971) classic reference, interstate compacts have been a popular mechanism throughout most of this century for allocating rights and responsibilities regarding interstate water resources among participating states The administration of most compacts is the charge of the interstate compact commission, although a few compacts (e g , Colorado River Compact) do not feature this administrative component Most compact commissions are headed by governor appointees of the compacting states, and occasionally feature non-voting federal members Unanimity is the typical decision rule, however, the compact vehicle is sufficiently flexible to allow for a wide range of decision-making arrangements Budgets and staffing levels are highly variable, depending mostly on the nature of the commission's mandate and the significance of the resource in question (Hill, 1992, Hardy, 1982, Council of State Governments, 1983)

The roles and functions of compact commissions are generally derivative of two factors the nature of the compact, and the degree of authority and autonomy granted the commission The National Water Commission (1973) found that interstate water compacts generally are used in four subject areas (1) water allocation, (2) pollution control, (3) flood control and planning, and (4) project development Water compacts dealing with multiple-purposes are rare, and are usually reserved for the federal-interstate compact device (discussed later) The roles and authorities of compact commissions are highly variable, even between compacts addressing similar subject matter Political viability is the key determinant of a commission's authorities As Derthick (1974) and others have shown, the more formal authorities vested in a proposed organization, the less likely it will successfully navigate the political hurdles involved in securing the necessary authorizing legislation Since interstate compacts require unanimous agreement among the basin states and

[5]Note that these categories do not represent all the possible forms of coordination mechanisms available (Dworsky and Allee 1980) Compiling such a list would be impossible since it is impossible to know in prospect the political and legal limits that ultimately determine which innovations are possible These categories only include those mechanisms which have been applied in major basins in American history Given the physical location of the ACT ACF basins it is unnecessary to consider those arrangements designed primarily for international or intrastate resources This list is also confined to those coordination mechanisms that were intended to be permanent arrangements although many have had short lifespans This excludes from consideration temporary study commissions

[6]This summary of organizational forms is drawn heavily from Kenney (1993)



7

Congress in order to take effect, it is unusual to find a politically viable compact which creates a commission with a high degree of authority Consequently, most compact commissions have a "soft" management emphasis, concentrating primarily on improving the collection and dissemination of basinwide information among the affected parties, and acting as a regional advocate in dealings with the federal government (Muys, 1971, Donahue, 1987)

The primary strengths of compact commissions lie in the strength of the compact mechanism itself Compacts are well established and enforceable mechanisms for addressing interstate disputes--in fact, interstate compacts have been used in the United States since colonial times, although water compacts are a 20th century phenomenon Compact commissions can potentially be vested with broad responsibilities and authorities, a byproduct of an organizational form delineated around traditional political jurisdictions (i e , state boundaries) The major drawback to the compact commission approach concerns the politics of formation, specifically, the aforementioned requirement of unanimity which often results in "watered down" agreements and weak commissions (Donahue, 1987) Compacts can generally be successfully negotiated and ratified only when needs are pressing and basinwide, and even then, the process of negotiation and ratification can be laborious and time consuming The Second Hoover Commission found that water compacts, on average, take approximately nine years to successfully negotiate and ratify (Martin et al , 1960) Despite the difficulties in enactment, however, dozens of compacts and compact commissions dot the institutional landscape, and the compact commission is well established as the most widely recognized form of regional coordination mechanism for the control of interstate water resources (Council of State Governments, 1983)

2 Interstate Councils Interstate Councils are the other major form of state-dominated coordination mechanisms widely utilized in the context of regional water resources As Donahue (1987 136) reports, this organizational form technically encompasses the interstate compact commission, but "is generally characteristic of less formal arrangements, established via federal legislation, consistent multi-state legislation, multi-state resolution or informal consent " Council members are typically state officials--most often governors or their appointees--vested with formal authorities and powers independent of the council Decision-making usually requires unanimity

As is true of most coordination mechanisms, the specific roles and functions of interstate councils can only be described in a general manner due to the considerable variability observed in practice The functions of most councils can be described as "soft"--e g , communication, advocacy, and research--with decisions being implemented, if at all, by more established bureaucracies (Donahue, 1987) This *modus operandi* is best illustrated by the typical governor's council, in which participating governors negotiate and determine regional policies which are then implemented by the relevant state agencies

Like compact commissions, interstate councils are a flexible and well established organizational form, utilized successfully in many basins nationally While a lack of formal authorities and federal participation often limits the range of application of interstate councils, this same feature ensures that these coordination mechanisms are generally easy to establish The participation of state governors also has both positive and negative attributes Motivated and active state governors can make an interstate council a potent



8

Congress in order to take effect, it is unusual to find a politically viable compact which creates a commission with a high degree of authority Consequently, most compact commissions have a "soft" management emphasis, concentrating primarily on improving the collection and dissemination of basinwide information among the affected parties, and acting as a regional advocate in dealings with the federal government (Muys, 1971, Donahue, 1987)

The primary strengths of compact commissions lie in the strength of the compact mechanism itself Compacts are well established and enforceable mechanisms for addressing interstate disputes--in fact, interstate compacts have been used in the United States since colonial times, although water compacts are a 20th century phenomenon Compact commissions can potentially be vested with broad responsibilities and authorities, a byproduct of an organizational form delineated around traditional political jurisdictions (i e , state boundaries) The major drawback to the compact commission approach concerns the politics of formation, specifically, the aforementioned requirement of unanimity which often results in "watered down" agreements and weak commissions (Donahue, 1987) Compacts can generally be successfully negotiated and ratified only when needs are pressing and basinwide, and even then, the process of negotiation and ratification can be laborious and time consuming The Second Hoover Commission found that water compacts, on average, take approximately nine years to successfully negotiate and ratify (Martin et al , 1960) Despite the difficulties in enactment, however, dozens of compacts and compact commissions dot the institutional landscape, and the compact commission is well established as the most widely recognized form of regional coordination mechanism for the control of interstate water resources (Council of State Governments, 1983)

2 Interstate Councils Interstate Councils are the other major form of state-dominated coordination mechanisms widely utilized in the context of regional water resources As Donahue (1987 136) reports, this organizational form technically encompasses the interstate compact commission, but "is generally characteristic of less formal arrangements, established via federal legislation, consistent multi-state legislation, multi-state resolution or informal consent " Council members are typically state officials--most often governors or their appointees--vested with formal authorities and powers independent of the council Decision-making usually requires unanimity

As is true of most coordination mechanisms, the specific roles and functions of interstate councils can only be described in a general manner due to the considerable variability observed in practice The functions of most councils can be described as "soft"--e g , communication, advocacy, and research--with decisions being implemented, if at all, by more established bureaucracies (Donahue, 1987) This *modus operandi* is best illustrated by the typical governor's council, in which participating governors negotiate and determine regional policies which are then implemented by the relevant state agencies

Like compact commissions, interstate councils are a flexible and well established organizational form, utilized successfully in many basins nationally While a lack of formal authorities and federal participation often limits the range of application of interstate councils, this same feature ensures that these coordination mechanisms are generally easy to establish The participation of state governors also has both positive and negative attributes Motivated and active state governors can make an interstate council a potent

political force, however, the council's dependence on the participation and political resources of its members can be a liability if leadership is lacking or if council members face opposition from their state legislatures

The most prominent and widely praised of the interstate councils is also among the most unusual and authoritative councils in existence In fact, the Northwest Power Planning Council (NWPPC) so blurs the already fuzzy lines between councils and compact commissions, it could conceivably be used as the basis for a new category of coordination mechanism The membership of the NWPPC is not unusual--i e , the governors of Washington, Oregon, Idaho and Montana, but its legal foundation of federal legislation followed by interstate compact provides the Council with a highly unusual degree of authority, including the power to regulate the activities of some federal actors in the Columbia Basin It is this feature that attracts most of the scholarly attention, including the writings of Volkman and Lee (1988), Wandschneider (1984) and Lee and Clark (1985)

3 Basin Interagency Committees As the name implies, the term "basin interagency committee" is usually utilized to describe entities primarily comprised of federal agency representatives active in a particular river basin However, since most of the prominent examples of basin interagency committees have provided some limited opportunities for state participation (either political leaders or agency officials), these mechanisms merit inclusion in the federal-interstate category This form of coordination mechanism dominated the institutional landscape in several American river basins from the 1940's through the 1960's, acting as vehicles for the coordination of major water planning and development activities (Hart, 1971, ACIR, 1972, NWC, 1973) The most prominent of these organizations were the so-called "firebrick" committees, which--like many interagency committees--did not feature a formal legislative foundation, but were merely creatures of the participating agencies As such they were dependent on the member agencies for both their resources (budgets and staffing) and formal authorities, and gravitated toward "soft" roles such as coordinating research [7] The rules of decision-making in the firebrick committees proved to be largely irrelevant, since the committees had no statutory authority to implement their decisions As a practical matter, major decisions reached at field-level among the involved agencies would require subsequent approval by agency directors, governors, the president, and ultimately Congress before major actions were authorized and resources allocated This type of decision-making arrangement places a premium on the ability to reach unanimous decisions (Maass, 1951, Hart, 1971, ACIR, 1972)

The informal and ad hoc nature of this form of coordination mechanism is the root of its primary strengths and weaknesses (Hart, 1971, Donahue, 1987) The flexible and pragmatic nature of basin interagency committees provides the potential for prompt and creative problem-solving, while remaining relatively dormant and cost-free during calmer periods The committees also benefit from placing field-level federal resource administrators in direct contact with each other and with state representatives, facilitating the transfer of information and ideas Given the central role of agency personnel, combined with the lack of formal management authorities, these interactions are undoubtedly most effective when the committees are charged with information gathering and other technical

[7]The functioning of these committee is discussed in greater detail later in this report Additional information can be found in studies by Dworsky (1974) Hart (1971) and Maass (1951) among others and in the numerous federal water resource reports published in and around the 1950 s

tasks The obvious weakness of this organizational form is that decisions are generally not binding and cannot be implemented without outside approval Consequently, there is no real incentive or mechanism for reaching agreement on difficult issues When significant interagency conflicts arise, basin interagency committees are often bypassed as a conflict resolution vehicle (Maass, 1951, NWC, 1973)

4 Interagency-Interstate Commissions The interagency-interstate commissions are descendants of the basin interagency committees, and share many of the same characteristics, however, the interagency-interstate commissions have three qualities which justify their inclusion in a separate category (1) they have a formal legislative basis, (2) they maintain permanent and independent staffs, and (3) they more fully treat states as equals to their federal counterparts (Hart, 1971, Donahue, 1987) This form of coordination mechanism is defined to include the "Title II commissions" established pursuant to Title II of the Water Resources Planning Act of 1965 and terminated by presidential order in 1981 (ACIR, 1972, Gregg, 1989) These commissions, like basin interagency committees, featured a membership of federal agencies and state representatives, usually governors or their appointees [8] Funding for the commissions came from relatively equal contributions from both federal and state treasuries Each member had one vote, and most commissions made decisions either by consensus or unanimity--although the exact voting rules of the Title II Commissions were the subject of considerable confusion [9] Each commission had an independent chairman appointed by the president, and a vice-chairman selected by the basin states, innovations which Gregg (1993) believes helped many of the commissions to look beyond the narrow water development agendas held by many member agencies The primary functions of the Title II commissions were to prepare comprehensive and basinwide water resources plans, and to coordinate and advocate improved water management policies within their jurisdictions

Most of the differences between the firebrick committees and the Title II commissions were overshadowed by the similar political environment in which both organizations were placed Since neither type of organization possessed a sufficiently high level of independent resources and clout to implement their decisions without the cooperation of Congress, the Executive (via the Water Resources Council after 1965), or the participating agencies, both types of organizations primarily utilized a decision rule of unanimity and gravitated toward the "soft" management functions of communication, information gathering, and advocacy (ACIR, 1972, Gregg, 1989, Hart, 1971, NWC, 1973, Donahue, 1987) These generalizations do not fit for all the organizations in all instances, but are sufficiently prevalent to consider these two types of coordination mechanisms to be close relatives, despite their different legal structures

Although the interagency-interstate commissions suffered from many of the same weaknesses that constrained the basin interagency committees, the Title II format did offer several notable advantages over the earlier coordination mechanism (Hart, 1971, Donahue,

---

[8]The commissions featured one representative each from the major federal agencies/departments active in the basin (usually 10 or 11) one representative from each state partly or completely within the basin and in some commissions one representative each from major interstate organizations with water resources responsibilities

[9]This subject is discussed in detail by the Advisory Commission on Intergovernmental Relations (1972) and Hart (1971) as well as being examined later in this report

1987, Foster, 1984) By joining state and federal representatives in a relatively coequal decision-making environment, the interagency-interstate commission provided a conceptually and pragmatically attractive environment for agency coordination and intergovernmental relations in the era of "cooperative federalism " The presence of an independent staff and chairman further strengthened this form, providing the promise of a technically competent administrative infrastructure for the collection and dissemination of information at the regional scale These attributes were both supported by the formal statutory basis of interagency-interstate commissions, which provided a degree of status and resources not enjoyed by the basin interagency committees [10]

5 Federal-Interstate Compact Commissions The remaining form of federal-interstate regional organization is the federal-interstate compact commission (Derthick, 1974, GAO, 1981, Muys, 1971) Unlike a typical interstate compact which requires congressional consent and ratification but does not require or provide for subsequent federal involvement, a federal-interstate compact includes the federal government on an equal footing with the states [11] This institutional arrangement resolves, at least in theory, many of the constitutional issues of basin management, while providing the full resources of the federal government to an organization primarily comprised of state members The federal-interstate compact device is also distinguished from the typical interstate compact in that the two existing federal-interstate compacts provide for comprehensive, multiple-purpose management (Muys, 1971) It is this combination of features that account for the high scholarly praise associated with this mechanism, a subject discussed later in this chapter

The federal-interstate compact commission was pioneered in the Delaware Basin in 1961, and subsequently copied (almost verbatim) in the Susquehanna Basin in 1970 (GAO, 1981, Voight, 1972) These organizations are governed by an executive committee of state governors (or their appointees) and a federal representative appointed by the president The rules of decision-making are negotiated as part of the compact, and can theoretically vary by subject matter and by the nature of the federal commitment A majority-rule system is featured prominently in both commissions, although certain budgetary decisions require unanimity The commission's decisions are primarily implemented by the administrative branch of the organization, which integrates and coordinates commission activities into a comprehensive basinwide plan that is binding on other regional actors

As discussed earlier, interstate compacts in general provide an extremely strong statutory basis for a commission These qualities are further enhanced by the formal participation of the federal government in the federal-interstate compact device Consequently federal-interstate compact commissions can potentially be vested with an extremely wide range of authorities and responsibilities, as has been done in the Delaware and Susquehanna efforts This strong legislative foundation, however, is undoubtedly a

---

[10] It is notable that the two most active firebrick committees in the Missouri and Columbia Basins- were quickly replaced with Title II Commissions following passage of the Water Resources Planning Act of 1965

[11] The role of the federal government in the terms and administration of the compact is highly similar to that of the basin states in most cases except that the federal government is exempt from some of the constitutional restrictions on the states and is generally not bound by decisions that the federal representative does not approve

political liability, as "the federal-state compacting process is potentially several orders of magnitude more complex and divisive than that of the interstate compacting process" (Donahue, 1987 132) Failed efforts to enact federal-interstate compacts in the Missouri and New England Basins provide evidence of this challenge of political acceptance (Voight, 1972)

Although efforts in the late 1960's to establish a federal-interstate compact in the Potomac Basin failed, modifications to an existing compact and compact commission have produced an organization that closely approximates the federal-state partnership seen in the Delaware and Susquehanna Basins (ICPRB, 1979) The Interstate Commission on the Potomac River Basin (ICPRB), formed pursuant to the Potomac Valley Compact (1940, amended 1970), coordinates the regional management of the Potomac in the states of Maryland, Virginia, West Virginia, Pennsylvania, and the District of Columbia Although the federal government is not a compact signatory--as in the Delaware and Susquehanna compacts--the ICPRB provides full voting rights to federal participants, an arrangement justified in large part by the central role of the U S Army Corps of Engineers in providing drinking water to the District of Columbia [12] Primarily through research and advisory roles, this innovative arrangement in the Potomac Basin has been highly effective in addressing regional water quality issues (the ICPRB's original mandate), and more recently, in vastly increasing regional water supplies through a technically sophisticated--and almost entirely nonstructural--program of improved reservoir operations (Steiner, Holmes and Schwartz, 1988, IWR, 1991) [13]

6 Federal Regional Agencies The first of the two forms of federal regional water organizations established in the United States was the federal regional agency A federal regional agency is an independent and self-sufficient entity created by federal legislation, and vested with formal and broad management authorities over a specific physical area (Donahue, 1987) Being a federal agency, it is headed by federal representatives appointed by the president, and is at least partially supported by federal appropriations Any further generalizations are impossible, since only one significant example of this form exists in the water resources field the Tennessee Valley Authority (TVA) As discussed in detail later in this chapter, the TVA, created in 1933, is probably the most famous and widely studied regional water organization in the United States (Selznick, 1966, Martin et al , 1960, Derthick, 1974) It was the sole product of the "valley authority" movement, a depression-era movement to establish regional water institutions void of interagency conflicts and geographic and functional fragmentation

The federal regional agency, and the TVA in particular, is appealing on three levels First, this form of coordination mechanism allows activities to be focused at the river basin scale--or some other functionally-defined construct--thereby facilitating an efficient and

---

[12]The Upper Colorado River Commission (UCRC) also provides full voting rights to a federal representative However the apparent federal state partnership provided by the UCRC's voting arrangement is largely symbolic since it is the Colorado s "single federal administrator" that ultimately shapes regional policy Many other compact commissions provide for an element of federal participation, but rarely on a scale approaching the partnerships seen in the Potomac Basin or in the federal interstate compact commissions

[13]Of the 19 interstate compact commissions evaluated by Hill (1992) the ICPRB was judged to be the most effective

technically sound approach to water development and management Secondly, the high level of formal authority available to the organization due to its statutory basis and federal standing allows the federal regional agency to pursue a comprehensive mandate And lastly, the integration of planning, development, and management activities within a single agency, combined with the broad mandate, eliminates the need for interagency cooperation and bargaining, and allows a single organization to implement the programs which it develops All of these qualities can be seen in the Tennessee Valley, where the TVA has aggressively pursued a water development and management program primarily focused on flood control, power generation (from hydro, coal, and nuclear sources), navigation improvements, and regional economic development (Freeman and Lesene, 1981)

In practice, the federal regional agency form of coordination mechanism has at least two significant drawbacks The primary weakness is its irreplicability Dozens of proposals to replicate the TVA have been pursued, but all have failed primarily due to strong opposition from existing agencies and to the feared expansion of governmental (especially federal) influence (Fox, 1964) [14] As Derthick (1974 192) has noted, the creation of the TVA was a "political accident," arising from a unique period of economic and political chaos In addition to this practical weakness, the federal regional agency form is also potentially troublesome in its subordination of the states, although research by Selznick (1966) and Ingram (1973) suggests that the TVA has generally been responsive to local interests

7 Single Federal Administrator The second type of federal organization for the control of interstate water resources is the single federal administrator, seen in only one major basin the Colorado (Kenney, 1993, WRC, 1967) Donahue (1987 161) reports that this category of coordination mechanism includes "any arrangement in which a single, federally appointed administrator is vested with decision-making authority over the use and management of a given resource or set of resources within a specified geographic area " In theory, this definition includes court appointed River Masters used to oversee and implement judicial apportionments, however, the "single federal administrator" descriptor is generally reserved for the Colorado situation

In the Colorado, the Secretary of the Interior--a presidential appointee--is the single federal administrator, a byproduct of federal legislation and the Supreme Court's decision in Arizona v California (1963) Among the many water management areas where the Secretary has major responsibilities are the determination of reservoir operating regimes, the marketing and delivery of water from federal projects, the administration of Indian water (and land) resources, the design and implementation of fish and wildlife protection programs, including those for endangered species), the management of federal rangelands, parks and wildlife refuges, the formulation and administration (along with EPA) of salinity control strategies, the performance and sponsoring of regional water resources research, and the interpretation and implementation of the provisions of the Colorado River Compact--one of the few interstate compacts which does not employ a compact commission (Kenney, 1993)

---

[14] Although the TVA model has not been successfully replicated in other American river basins the form has been endorsed and applied in several other countries

From a conceptual standpoint, the strengths and weaknesses of this organizational form are largely linked to the qualities of authoritative and "top-down" management strategies (Donahue, 1987) In theory, the single federal administrator has the potential to quickly, efficiently, and equitably address difficult and contentious issues in a creative and definitive manner The past performance of the Interior Department in Colorado River politics, however, does not inspire great confidence in the ability of the federal bureaucracy to effectively and equitable balance competing demands in the basin, especially in this modern era where many of the fundamental principles of the federal reclamation program have come into public disfavor (Kenney, 1993, Reisner, 1986) Modern trends in public administration call for more decentralized (in this case, state-dominated) decision-making arrangements, and for the transfer of decision-making responsibilities from administrators to elected officials--an acknowledgment that many water management decisions are not merely technical exercises, but are ultimately choices among divergent public values (Kenney, 1993, Feldman, 1991, Osborne and Gaebler, 1992) Primarily for these reasons, the single federal administrator approach has few advocates in the Colorado and elsewhere

Lessons from the American Experience An Historical Review

Although most of the interstate experiments and academic investigations relevant to the ACT-ACF study have occurred in the past fifty years, it is worthwhile to briefly review *the entire* American experience with interstate water management since this forms the institutional medium upon which all current arrangements must be designed An historical review also provides the appropriate context for a more detailed and critical review of the types of coordination mechanisms described in the preceding section More detailed historical reviews are provided by Holmes (1972, 1979), Kenney (1993), Wengert (1981), Teclaff (1967), and Kindsvater (1964), among others

Without question, the most important legacy of 19th century American water management policies was the emergence of federal primacy in interstate water resource development and administration, primarily limited to the goal of navigation improvements Shallat (1992) documents the lengthy political and legal debate concerning the proper allocation of responsibilities among federal, state and private interests, and shows that federal primacy was established due to at least three major factors (1) most canal-building efforts financed by state and private interests were financial failures (MacGill, 1917), (2) Supreme Court interpretations of the Commerce Clause (and later the Property Clause), such as in Gibbons v Ogden (1824), established federal regulatory control over interstate waters, and (3) the Army Corps of Engineers, created in 1802, emerged as the leading technical body concerned with navigation improvements

National water policy remained preoccupied with the single purpose of navigation until the Progressive Conservation movement (circa 1890-1920), when the concept of multiple-purpose development was born--over the objections of the navigation-oriented Corps of Engineers (Hays, 1959) [15] This era also marked the first time serious scholarly

[15]The Corps opposition to multiple purpose planning was largely responsible for the deauthorization of the Newlands Commission (created in 1917, deauthorized in 1920), which would have established an

attention was given to the subject of institutional arrangements for river basin administration Writing about the arid lands in the western United States, John Wesley Powell (1878, 1890) introduced the idea of linking land and water institutions, facilitated through the creation of highly autonomous local governments organized along "hydrologic basins" (Stegner, 1953) While his belief in local, bottom-up decision-making did not find support in the Progressive movement (which instead supported the expansion of federal agency discretion), the idea that water institutions should conform to the shapes of hydrologic basins was strongly endorsed This idea permeated the reports of the Inland Waterways Commissions (1907-1912) and the National Conservation Commission (1909) [16]

Despite the Corp's earlier reluctance to endorse multiple-purpose river basin planning, congressional actions in 1925 and 1927 charged the Corps and the Federal Power Commission (created in 1920) to develop a series of comprehensive river development plans integrating the purposes of navigation, hydropower production, flood control, and irrigation (Schad, 1964, Teclaff, 1967) These studies became known as the "308 Reports" since the rivers to be studied were listed in House Document 308, 69th Congress, 1st Session Over 200 "308" studies have since been conducted (Teclaff, 1967)

Up to this time, there had been little experimentation with coordination mechanisms With the exception of some primitive federal experiments in the Mississippi and Missouri Basins in the 1870's and 1880's, the only significant mechanism to have emerged by 1930 was the interstate water compact--pioneered in the Colorado River Basin Hundley (1975) provides the classic reference of this massive political struggle, in which the Colorado River Compact was drafted and signed by the seven states in 1922, but was not ratified by Congress until 1928 and did not become effective until 1929 As Muys (1971), Hardy (1982), and many others have documented, the following decades saw a dramatic increase in the use of interstate water compacts In the fifty years following the ratification of the Colorado River Compact, eighteen other major rivers were apportioned by interstate compact, and a lessor number of compacts pertaining to flood control and water quality were also enacted [17] This experimentation with compacts was, at least in part, prompted by the Supreme Court's development of the "equitable apportionment" doctrine in 1907, an unpredictable and administratively void mechanism for managing interstate water resources [18]

---

independent federal commission to formally oversee a national process of multiple purpose river basin planning

[16]In his letter appointing the Inland Waterways Commission President Roosevelt asserted that Every river system from its headwaters in the forest to its mouth on the coast is a single unit and should be treated as such (Inland Waterways Commission 1908)

[17]Hill (1992) and the Council of State Governments (1983) provide detailed listings of interstate water compacts including some information regarding memberships structures functions and other organizational characteristics

[18]The doctrine of equitable apportionment was first applied in the case of Kansas v Colorado (1907) a dispute involving states with different water law doctrines The first application of the equitable apportionment doctrine in states with similar water law doctrines was in Wyoming v Colorado (1922) a case which provided much of the impetus behind the pursuit and eventual ratification of the Colorado River Compact

The economic and psychological shock brought on by the Great Depression (during the 1930's) created an era conducive to experimentation and innovation In few areas was this more evident than in river basin development, which quickly became a major element in Franklin Roosevelt's employment and economic development strategy under the auspices of the New Deal Water development in the depression era has been aptly described by Reisner (1986) as the "Go-Go Years," as organizations such as the Public Works Administration (PWA), Works Progress Administration (WPA), Civilian Conservation Corps (CCC), and pre-existing federal agencies constructed a dizzying array of projects By the mid-1930's, the four largest concrete dams ever built were under construction Hoover, Shasta, Bonneville, and Grand Coulee

The impressive scale of depression-era construction projects was matched by an equally fervent effort to identify new mechanisms and institutional arrangements to promote regional economic growth Without exception, the most notable of these innovations was the creation in 1933 of the Tennessee Valley Authority, a federal regional agency empowered to pursue an agenda of navigation improvements, flood control, power generation, reforestation, and related activities designed to facilitate regional agricultural and industrial development The TVA constructed over fifty projects in its first fifty years, utilizing a multi-billion dollar annual budget financed primarily through power revenues (Freeman and Lesene, 1981)

The TVA is probably the most studied coordination mechanism in existence The work of Selznick (1966) remains the classic reference, although Derthick (1974), Martin et al (1960), and Reisner (1986), among others, provide a valuable and divergent array of perspectives on the federal regional agency [19] The TVA is a uniquely centralized and authoritative federal water agency, enjoying an unparalleled level of autonomy from both Congress and the seven basin states The agency's multiple-purpose orientation, its economic development emphasis, its hydrologically-delineated jurisdiction, and its federal primacy all reflect ideas that rose to prominence in the preceding decades, but had never been so comprehensively or aggressively implemented

The primary force behind passage of the agency's organic legislation was President Franklin Roosevelt, who went on (in 1937) to suggest expanding the experiment to include seven other river basins As Fox (1964 72) recalls, these proposals received mixed reviews

> Advocates of the federal valley authority believed it was the ultimate answer because the river basin was treated as a unit, the state boundary problem was hurdled, centralization of authority in Washington was avoided, and inter-agency rivalry was eliminated The opponents were those who feared widespread expansion of public power and encroachment upon state prerogatives, as well as the existing agencies and their clientele whose power and authority would be diminished through general applicability of the valley authority arrangement

[19] Colignon (1983) provides a scholarly reinterpretation of Selznick s classic work utilizing a political and historical perspective rather than the structural functional approach utilized by Selznick

Roosevelt's remarks initiated a national "valley authority" movement Almost immediately, bills were before Congress calling for valley authorities in over a dozen basins, including the Upper Mississippi, Cumberland, Arkansas, Wabash, Columbia, Sacramento-San Joaquin, Missouri, Tombigbee, Connecticut, Merrimack, Ohio, Arkansas, Red, and Rio Grande (NRC, 1935, Martin et al , 1960, Teclaff, 1967) Such proposals continued for almost twenty years, but none were successful largely due to entrenched bureaucratic opposition and fears of increased federal primacy [20]

River basin development and administration was a topic examined in several depression-era studies, including those of the President's Committee on Water Flow, the Mississippi Valley Committee of the Public Works Administration, the National Resources Planning Board and its Water Planning Committee, and the National Resources Committee and its Water Resources Committee, prompting the Advisory Commission on Intergovernmental Relations (1972 6) to classify this era as the "renaissance of regionalism " It was the National Resources Committee that most directly and thoughtfully considered the issue of appropriate institutional arrangements for river basin development Although the Committee (1935) endorsed the TVA model as well as calling for additional interstate compacts, the group's primary recommendation was for the establishment of more informal and flexible arrangements, primarily interagency coordinating committees featuring both federal and state representatives and a federal chairman Witnessing the strong bureaucratic opposition generated to defeat the valley authority movement, the National Resources Committee correctly anticipated that interagency coordinating committees were the more politically viable institutional arrangement for the future

The era of "basin interagency committees" officially began in 1943 with the establishment of the Federal Interagency River Basins Committee (FIARBC), a group drawing members from the Departments of Interior, Agriculture, and Army, the Federal Power Commission, and later, the Department of Commerce and the Public Health Service (NWC, 1973) By 1950, five so-called "firebrick" committees had been established serving the Missouri, Columbia, Pacific Southwest, Arkansas-Red-White, and New York-New England Basins (Dworsky, 1974, Hart, 1971, NWC, 1973) [21] The firebrick committees were primarily designed to coordinate the activities of the federal agencies within river basins--a function inherited from the National Resources Planning Board--and to provide a modest degree of state participation in federal planning efforts However, as Foster (1984) reports, only in the New York-New England Basins did this level of state participation approach equality

---

[20] Very few of these proposals received serious consideration with the exception of the valley authority movement in the Columbia Basin As Donahue (1987 153) reports "On only three occasions (1937 1945 1949) was a bill granted a hearing only once (1945) was such a bill reported out of committee and on that occasion received an unfavorable recommendation

[21] Oversight of the firebrick committees was transferred from the FIARBC to the Interagency Committee on Water Resources (ICWR) sometimes known as ' Icewater created in 1954 by order of President Eisenhower In 1966 the responsibility for overseeing these committees was again transferred by presidential order this time to the Water Resources Council During this time the committees changed very little

In comparison to many other coordination mechanisms, the literature on the basin interagency committees is relatively rich and diverse [22] The conclusions reached in studies by Maass (1951), the National Water Commission (1973), Baumhoff (1951), Hart (1971), Martin et al (1960), among others, however, are highly consistent The firebrick committees are generally considered to have been ineffective coordination mechanisms, primarily because they provided no real incentive for coordination [23] It was Congress, and not the firebrick committees, who approved or rejected proposed development schemes, consequently, when disagreements arose among the committee's participating agencies, each would simply take their own plans to Congress--a forum where enforceable decisions could be made and implemented As Ingram (1972, 1990) and many other authors have documented, the politics of water development calls for Congress to select projects based on political criteria, and not upon any "scientifically rational" process guided by principles of hydrology or economics [24] While this approach to water development provides political benefits to congressmen, economic benefits to water development advocates, and large construction budgets for the agencies, it does not provide agencies or Congress with a compelling incentive to promote logically coordinated plans When agencies have provided Congress with separate and largely uncoordinated development programs, Congress has often chosen to authorize both programs--the most famous example being the Pick-Sloan Plan for the development of the Missouri Basin, a scheme in which the Bureau of Reclamation pursued an agenda of irrigation and hydropower development while the Corps designed and built projects primarily to provide downstream navigation and flood control benefits (Baumhoff, 1951)

The failure of federal agencies to meaningfully coordinate their activities and their continued reluctance to encourage co-equal state participation in river basin planning, development and management was addressed by several post-war study commissions, including the First Hoover Commission (1949), the President's Water Resources Policy Commission (1950), the Second Hoover Commission (1955), the President's Advisory

---

[22]This discussion of interagency committees is limited to the firebrick committees since they were intended to serve as permanent coordination mechanisms Approximately two dozen other interagency "coordinating committees' were established during this era, however to conduct river basin studies in specific regions (Hart 1971) These temporary arrangements shared many structural similarities with the firebrick committees with the exception that a few committees were established by congressional action -i e resolutions of the Senate Committee on Public Works (Most of the committees were established by the ad hoc water resources council ' in 1964 a short lived executive arrangement active in the early 1960 s ) Eventually these committees fell under the supervision of the Water Resources Council, along with the firebrick committees and the Title II Commissions, and were terminated upon completion of their studies Basins featuring these interagency study commissions included the Ohio Lower Mississippi Pascagoula Pearl Susquehanna and Connecticut among others

[23]Note that most of the criticisms directed toward the firebrick committees regarded the inability of these mechanisms to function effectively as conflict resolution and decision making entities While Dworsky (1974) and Dworsky Allee and North (1991) concede this point they emphasize that the firebrick committees were considerably more successful in the performance of other functions primarily the coordination and dissemination of technical research These are tasks which do not require a great deal of formal authority nor do they require extensive communication with state policy makers In these areas the firebrick committees represented an improvement over existing arrangements

[24]The politics of water development are also skillfully documented by McCool (1987) Maass (1951) and Gottlieb (1988) among others

Committee on Water Resources Policy (1956), and the Senate Select Committee on National Water Resources (1961) [25] These reports responded to widespread public criticisms regarding interagency competition and policy fragmentation with a variety of recommendations, including the consolidation of the federal water development bureaucracy into a single superagency, the establishment of federal review boards to oversee and regulate the selection of projects and river basin plans, the promulgation of more specific standards for project evaluations, and the establishment of new types of coordination mechanisms featuring meaningful federal-state cooperation Although none of the major recommendations from any of these reports were immediately or fully acted upon, they did influence the sweeping reforms that awaited in the 1960's [26]

Three new and highly distinct forms of coordination mechanisms appeared in the 1960's (The basic features of these forms were described earlier) The Delaware River Basin Commission, established in 1961, pioneered the use of the "federal-interstate compact commission" (GAO, 1981) This landmark effort followed failed attempts to establish federal-interstate compact commissions in the Missouri and New England Basins As Voight (1972) and Foster (1984) document, these efforts failed primarily due to opposition from the federal water development bureaucracy, fearful of losing autonomy in these regions Two years later, a Supreme Court decision concerning the Colorado River Basin established the administrative framework described earlier as the "single federal administrator" And in 1965, Title II of the Water Resources Planning Act provided for the establishment of a series of "interagency-interstate commissions "[27] Title II Commissions were quickly established by presidential order in the Pacific-Northwest, Souris-Red-Rainy, Great Lakes, Ohio, New England, and Missouri regions (ACIR, 1972, Hart, 1971) [28] The Souris-Red-Rainy commission was eventually subsumed by the creation of the Title II Commission in the Upper Mississippi Basin

The most anomalous and nationally insignificant of these mechanisms is the single federal administrator approach seen in the Colorado River Basin, created by Supreme Court action (and earlier decades of federal legislation) in the case of Arizona v California (1963)

---

[25]The President s Water Resources Policy Commission is commonly referenced as the Cooke Commission in deference to chairman Morris Cooke Similarly, the Senate Select Committee on National Water Resources is best known as the Kerr Committee in deference to Senator Robert Kerr of Oklahoma

[26]One notable product arising from the reports criticizing the performance of interagency committees was the establishment of U S Study Commissions in the Southeast River Basins and in Texas These commissions operational from 1959 1963 were more notable for their composition and organization than for their reports (Pealy 1964) The commissions featured an independent staff a federal chairman direct federal appropriations and were comprised of state governors and federal agency representatives all appointed by the President The Apalachicola Chattahoochee Basin was one of eight basins examined by the Southeast River Basins commission

[27]Hart (1971) provides a useful and concise legislative history of the Water Resources Planning Act

[28]In additional to requiring the consent of the President establishment of a Title II Commission required the approval of a majority of the affected basin states and a positive recommendation by either the Water Resources Council or an affected state governor In the Upper Colorado and Columbia Basins approval of three of four governors was required (since these regions already had established coordination mechanisms) Similarly it was assumed that the Title II format was not applicable in either the Tennessee or Delware Basins since these basins already had authoritative and comprehensive water organizations in place

(Kenney, 1993) [29] That decision empowered the Secretary of the Interior--i e , the "single federal administrator"--with broad discretionary powers in the operation of the region's elaborate plumbing system, as well as "discovering" the ability of Congress to apportion interstate rivers Prior to this decision, it was generally felt that only two mechanisms of interstate apportionment existed the interstate compact, and the Supreme Court's usage of the "equitable apportionment" doctrine [30] The "discovery" of this congressional power, in theory, provides a powerful device which could be exploited in the design and creation of new coordination mechanisms, in practice, however, Congress has been unwilling to utilize this power in other basins, probably due to the undesirable political nature of apportioning limited resources [31]

Making a more national impression were the new arrangements in the Delaware (later copied in the Susquehanna) and those arising from Title II of the Water Resources Planning Act, administered by the Water Resources Council (established in Title I) [32] These two types of coordination mechanisms have been compared and contrasted by several authors, including the Advisory Commission on Intergovernmental Relations (1972), the National Water Commission (1973), Derthick (1974), the Water Resources Council (1967), Muys (1971), and in numerous other investigations Although Title II Commissions are almost universally deemed to be improvements over basin interagency committees, the literature is equally consistent in the conclusion that the federal-interstate compact approach is the preferred alternative when compared to the interagency-interstate commissions of Title II [33]

Although the nation's first federal-interstate compact commission was established four years before the enactment of the Water Resources Planning Act, it is the Title II Commissions that best represented the next evolutionary step beyond the basin interagency committees of the firebrick model The primary goals of the arrangements created pursuant

---

[29]While the institutional arrangements in the Colorado Basin are routinely criticized due to their reliance on federal actors it should be remembered that the region is comprised of over seventy percent federal lands (including Indian lands) and is served by an elaborate system of federally constructed (and financed) water projects (Kenney 1993)

[30]Hundley s (1975) review of the compacting process in the Colorado River Basin strongly suggests that the Supreme Court misinterpreted the true congressional intent of the Boulder Canyon Project Act of 1928 and that the legislation was never intended to function as a binding congressional apportionment of the interstate river

[31]A review of the American experience with interstate water conflicts strongly suggests that neither Congress nor the Supreme Court welcomes the challenge of creating interstate water apportionments the Supreme Court does not want the burden of making highly technical decisions which generally require subsequent administrative actions and Congress does not wish to resolve disputes for which positive sum outcomes are not readily available For these reasons both parties tend to promote the use of interstate compacts Erhardt (1992) provides a review of the three mechanisms for apportioning interstate rivers

[32]The Water Resources Council was originally comprised of the Chairman of the Federal Power Commission and the Secretaries of Agriculture Army Interior and HEW (Health Education and Welfare) Participation of the Secretary of Transportation and the administrator of the Environmental Protection Agency was accomplished in later years

[33]Additional praise for the federal interstate compact approach can be found in studies by the General Accounting Office (1981) Erhardt (1992) ACIR (1991) Bloom (1986) and Kenney (1993) Note that Erhardt (1992) suggests the creation of a federal interstate compact commission for the Chattahoochee River

to the Water Resources Planning Act were to improve interagency coordination (with an emphasis on federal-state cooperation), and to complete Comprehensive Coordinated Joint Plans (CCJP's) for river basin development (NWC, 1973, Hart, 1971) Plans of this nature were, to widely varying degrees, already under development in the basins establishing Title II Commissions, initiated by a variety of actors--including many of the firebrick committees and the "ad hoc" coordinating committees

The Title II Commissions, the Water Resources Council, and the associated planning framework established under the Water Resources Planning Act (WRPA) were terminated--without significant protests--by President Reagan in 1981 and 1982 As Gregg (1989 16), former chairman of the New England River Basins Commission, has observed, the demise of the WRPA system can primarily be attributed to "institutional limitations and historical obsolescence " One of the primary "institutional limitations" of the commissions was their inability to make enforceable decisions Since final decision-making authority in most areas remained with Congress and the member agencies (and was not transferred to the commissions), most commissions felt compelled to reach unanimous agreements in order to provide a reasonable chance of having decisions implemented [34] As discussed by the Advisory Committee on Intergovernmental Relations (1972 125), this political necessity ensured that the Title II Commissions were no more effective as forums of conflict resolution and decision-making than the preceding basin interagency commissions

> The unusual voting procedures stipulated by the Act attempt to produce virtually unanimous approval for commission basin-wide planning activities As such, they continue the tradition of earlier, less formal basin-wide institutions which placed a premium on the exchange of information among Federal and State agencies in an attempt to reach agreement on a plan that might be utilized as a further justification for Federal and federally assisted water resource projects These extraordinary voting procedures are perhaps appropriate for this kind of forum-type mechanism Such procedures would not be appropriate if the Title II commissions were to be given management responsibilities

As the ACIR observed, the organizational structure of the Title II Commissions provided a framework that was adequate for regional communication and debate, but was inadequate for the conflict resolution and regulatory responsibilities associated with resource management Yet, the commissions were created at a time when water development was waning due to environmental protests, fiscal concerns, and the exhaustion of good dam sites, and calls for improved resource management were intensifying [35] This

---

[34]The Water Resources Planning Act called for the commissions to make decisions by consensus an ambigious term which was defined differently by the various commissions (ACIR 1972) The selection of decision making rules for the commissions was a major element of debate during the genesis (1961 1965) of the Water Resources Planning Act (Hart 1971)

[35]This change in the direction of national water policy was identified by the National Water Commission (1973 58) which reported that in the future increased emphasis must be placed on the management of existing water developments as a means of improving regional growth potential rather than relying as heavily in the past on new projects

factor--described earlier by Gregg as "historical obsolescence"--meant that the commissions were designed for an era that had passed In those commissions where an effort was made to embrace this new emphasis on creative and environmentally sound water management--primarily the New England River Basins Commission--the deficiencies in authority hampered many otherwise feasible innovations (Foster, 1984) [36]

In contrast to the interagency-interstate commissions authorized under Title II of the WRPA, the federal-interstate compact commissions created in the Delaware and Susquehanna Basins were endowed with sufficient independent authorities to act in a management capacity This entails the ability to make decisions which are legally binding, and which can be implemented without the need for additional congressional actions or the total reliance on existing agencies for voluntary cooperation This includes the ability to block proposed actions that are inconsistent with the regional plans developed by these commissions It is this feature of the federal-interstate compact commissions that draws the bulk of the scholarly praise (NWC, 1973, ACIR, 1972, GAO, 1981), however, the coordination mechanisms seen in the Delaware and Susquehanna Basins have several other features of equal significance and value--including their possession of independent and technically competent staffs, their multiple-purpose and multiple-value mandates, their geographic scope (i e , problemshed-orientation), their reliance on state political leaders (i e , governors) rather than bureaucrats in guiding policy decisions, and the relatively equal balancing of state autonomy with federal supremacy Earlier experimentation nationwide with compact commissions, interstate councils, basin interagency committees and the interagency-interstate commissions were instrumental in identifying these organizational features as desirable in administrative bodies charged with management and planning responsibilities [37]

The theme of federal-state partnership--also known as "cooperative federalism" or "creative federalism"--expressed so forcefully in the federal-interstate compact device, was also featured prominently in the federal water quality program which evolved in the 1970's beginning with the Federal Water Pollution Control Act Amendments of 1972 [38] This legislation--primarily in sections 208, 209, and 303(e)--also featured a recognition of the need to concentrate water quality management activities at hydrologically delineated scales Water quality planning at the river basin scale (209 planning) was originally conceived to be conducted as part of the Level B (river basin) investigations conducted by the Water

---

[36]The New England River Basins Commission is the most widely studied and praised of the Title II Commissions Case studies are provided by Ingram (1971) Foster (1984) Derthick (1974), and Hart (1971) among others

[37]The intellectual forces behind the creation of the federal interstate compact are primarily Frederick Zimmerman and Mitchell Wendell These students of intergovernmental relations believed that interstate compacts were generally not being utilized in a sufficiently creative manner to tackle most regional water issues In particular they felt that compacts should be more multiple purpose in nature and should provide a federal state partnership in addressing problems a preferable arrangement to the rising tide of federal primacy at this time (For more information see The Interstate Compact Since 1925 published by the Council of State Governments in 1951 ) Martin et al (1960) utilized these ideas in their influential report which called for the eventual creation of the Delaware River Basin Commission

[38]The theme of federal state cooperation can also be seen in the cost sharing provisions of modern water development legislation including most recently the arrangements specified in the Water Resources Development Act of 1986

Resources Council However, the termination of the Water Resources Council, combined with the water quality program's emphasis on regulating point sources, has discouraged the realization of effective river basin water quality management in most regions--although some progress has been made in establishing water quality programs for estuaries and the Great Lakes (Adler, Landman and Cameron, 1993, Rubin, 1993, Dworsky, Allee and North, 1991)

As the cooperative federalism that shaped so much of 1960's and 1970's policy gave way to the "new federalism" of the 1980's, the latest of the notable forms of coordination mechanisms emerged embodying the notion of state control the Northwest Power Planning Council (NWPPC) The NWPPC is one of hundreds of interstate councils, an extremely varied and generally informal type of mechanism primarily utilized to promote coordination and consultation among states on a wide variety of matters The Council was formed by a unique combination of federal legislation followed by an interstate compact, a legal basis which provides the organization with an impressive degree of formal authority (Volkman and Lee, 1988, Wandschneider, 1984) The NWPPC is headed by the governors of the four Columbia Basin states, but is primarily charged with developing a system of reservoir operations which is implemented by (and binding on) the Bonneville Power Administration, one of the federal power marketing agencies of the Department of Energy The arrangement is "new federalism" in the extreme, and perhaps signals the latest emerging trend in the evolution of coordination mechanisms for interstate water resources [39]

With the notable exception of the NWPPC, the 1980's featured very little experimentation and innovation regarding interstate coordination mechanisms Recent efforts to reauthorize the Clean Water Act, however, have renewed scholarly interest in this subject, now frequently classified as "Watershed Management " Improving the efficiency of water quality programs at the small watershed scale is the primary motivation behind most of the current proposals, including those forwarded by the Environmental Protection Agency, the Association of Metropolitan Sewerage Agencies, the American Planning Association, the United States Geological Survey, and Water Quality 2000 (Goldfarb, 1993b, EESI, 1991, Water Quality 2000, 1992) [40] Among the most influential and broadly-focused reports include those of Water Quality 2000 (1992), the Long's Peak Working Group on National Water Policy (1992), and the reports emerging from the "Park City workshops" sponsored by the Western Governors' Association and the Western States Water Council (WGA and WSWC, 1991) [41]

Many of these proposals--including those forwarded by Water Quality 2000, the American Planning Association, and the United States Geological Survey--feature the "nested watersheds" concept, an approach to institutional design based on the premise that river basin institutions can be (and presumably should be) comprised of interrelated but discrete arrangements organized around nested hydrologic units (i e , from large river

---

[39]The institutional framework established by the Coastal Zone Management Act of 1972 (as amended in 1976 1980 1985 and 1990) features a similar subordination of federal agencies to state policy making bodies (Adams 1993)

[40]Water Quality 2000 is a group of over eighty organizations representing all levels of government industry professional organizations environmental groups and academia

[41]Also see the report of the Environmental and Energy Studies Institute (1991) and the recent publication of Goldfarb (1993b)

basins, to regional sub-basins, to local watersheds) This concept can be interpreted to support both a top-down or bottom-up approach to institutional design [42] This issue is tied to the debate of whether or not a "national water policy" should be crafted in order to guide innovations at sub-national levels Publications edited by Born (1989), Shroeder (1985), and Reuss (1993) provide an excellent overview of the highly divergent viewpoints on this issue While there is considerable controversy regarding the merits and the political feasibility of crafting a national water policy, there is general agreement that the shortcomings of existing national policies should not be utilized as an excuse for avoiding or delaying incremental and sub-national innovations whenever possible This undoubtedly includes further experimentation with coordination mechanisms at the river basin scale

## Further Experimentation Methodologies and Guiding Principles

### Institutional Analysis and Design Methodological Considerations

In theory, selecting a coordination mechanism for an interstate water resource is a relatively simple process First, an analysis of the current institution is conducted, identifying key deficiencies that should be addressed by the coordination mechanism Second, alternative types of coordination mechanisms are considered that have the potential to address these key institutional weaknesses Further case-specific analyses should narrow the list of possibilities to a manageable set, from which selected decision-makers can eventually make a selection Finally, a strategy for creating the mechanism is developed, and the difficult process of enactment is begun At each step in the process, the key trends and lessons derived from past experiences should shape which options are considered, and what design principles are accepted or rejected Unfortunately, this process is considerably more difficult in practice than in theory

Institutional analysis is a subject explored by numerous authors, representing disciplines (and sub-disciplines) as diverse as neoclassical economics, political science, public administration, public choice, institutional economics, organizational theory, political sociology, and federalism, among others (Gregg et al , 1991) Two of the most useful approaches are provided by Ingram et al (1984) and Gregg et al (1991) [43] Ingram et al (1984) outline a traditional "group theory" approach to institutional analysis, focusing

---

[42] A top down or centralized approach would prominently concentrate activity and governance authority with actors at the river basin scale with some oversight responsibility over pseudo autonomous entities at smaller hydrologic units In contrast a bottom up or decentralized approach would primarily concentrate activity and governance authority with organizations established to serve these smaller hydrologic units while providing mechanisms for these entities to form collective decisions at the river basin scale A broad continuum of possible approaches exists between the purely top down and purely bottom up strategies

[43] Numerous other approaches exist As mentioned earlier, those that emphasize the process of institutions are generally endorsed over those that focus primarily on outputs however it should be noted that the rigor and creativity with which an approach is applied is at least as important to good institutional analysis as is the selection of methodological approaches One of these output oriented approaches is provided by Goetze (1981) who calls for comparative analyses relying heavily on the collection and formal analysis of empirical information on institutional outcomes which would then presumably be compared with ideal outcomes following the selection of normative criteria The approaches advocated by Ingram et al (1984) and Gregg et al (1991) nicely consider both processes and outcomes

primarily on an assessment of actors and their stakes, the resources available to each group, and the features (and biases) of the relevant decision-making arenas. This leads to the identification of a half-dozen pragmatic categories of alternative strategies for improving deficient water institutions, a list that nicely complements the more generalized inventory provided by Lord (1984).[44]

Each of these processes of institutional analysis can (and probably should) be married to the conceptually simple approach of conducting interviews and meetings with involved parties, soliciting opinions on key institutional strengths and weaknesses. Harrison (1986) has used this approach to guide a reform effort in the Red River Valley of the North, arguing that the key to successful institutional reform lies in the definition of problems and the identification and discussion of value issues. Instead of a top-down, agency-dominated process, he advocates a bottom-up process relying heavily on public participation. Processes of this nature are highly dependent on the efficient gathering, dissemination and utilization of good technical and value-based information, a theme permeating the methodological recommendations of Cairns and Crawford (1991), Gregg et al. (1991), and many other researchers.

Once deficiencies of existing arrangements have been identified and the possible range of potential institutional responses has been at least generally surveyed, the process of designing new arrangements can begin. Institutional design, as distinct from institutional analysis, is the primary remaining challenge in this phase of the ACT-ACF study, which is based on the premise that some form of interstate coordinating mechanism should be considered in the region. The central remaining questions are what should this interstate coordination mechanism look like, and what process should be utilized to make this determination--questions that are too narrow and case-specific to be guided solely by general institutional design methodologies.

In the following pages, a methodological approach is proposed that draws from both the general institutional design literature and the more case-specific literature reviewing past experiments with coordination mechanisms. The approach recommended is based on two related premises. First, no single form of coordination mechanism is "best" for all basins, an assertion strongly reinforced in the water resources administration literature. Reform efforts must be tailored to fit the unique political, legal and social characteristics of each basin, as well as being influenced by the nature and magnitude of each region's water resource problems. And secondly, coordination mechanisms are comprised of a set of interrelated components that can be considered as individual building blocks in designing new arrangements. While it is occasionally desirable in a basin to exactly replicate an

[44]The list of 'strategies' developed by Ingram et al. (1984) for improving deficient water institutions includes: utilizing markets; modifying legal definitions, rights and relations; changing government water management practices; modifying institutional arrangements, pursuing negotiated settlements, generating and utilizing new information; and applying engineering and technical solutions. Lord (1984) identifies several key considerations and/or areas where improvements can be most readily made: separating values from facts and value decisions from technical decisions; separating social value and interests (i.e., values versus interests); achieving efficient water use and surplus allocations; allocating windfalls and profits in a manner providing positive incentives; internalizing externalities (preferably via market mechanisms rather than by regulation); and improving the relationship between technological fixes and institutional change (i.e., promoting institutional change when technological fixes are no longer appropriate, while still providing opportunities for the development and application of new technologies).

existing or pre-existing coordination mechanism pioneered in another basin--as was done in the Susquehanna Basin--it is more likely that new innovations will be constructed from a case-specific mixture of functional, structural and operational components drawn from (or at least influenced by) a wide variety of institutional reforms Some of the more salient components, organized into six categories, are discussed in the following pages, and are listed in the order that they should be addressed during the design exercise

1 Functions and Responsibilities The most important design consideration when crafting new coordination mechanisms is to determine the functions and responsibilities of the proposed arrangement, a source of tremendous variability among existing coordination mechanisms (Donahue, 1987) When evaluating the functional qualities of these mechanisms, it is useful to distinguish between "soft management" functions (e g , research, monitoring, advising and advocacy) and "hard management" functions (e g , project development, operation and regulation) The majority of regional coordination mechanisms are created to undertake the "soft management" roles, in fact, very few organizations--even those prominent few created to pursue "hard management" tasks--neglect these information-based functions entirely, since most tasks are highly dependent on the gathering and dissemination of intraregional ideas and information The efficient collection, analysis, and dissemination of regionally-focused and functionally broad water resources data is an area of deficiency in many regional water institutions, primarily since most information providers traditionally lack the authorities, resources, incentives, and the political autonomy to gather and present comprehensive information from a regional perspective Most regional coordination mechanisms are expected, at least in part, to fill this void

When designing a regional coordination mechanism to undertake these soft management roles, it is unnecessary to establish an arrangement with a strong legal basis, nor is it always necessary for the organization to feature an independent staff if funds are available to support outside consultants or "research teams" comprised from the staffs of the participating entities (Albert, 1993) The key consideration from an institutional design perspective is to ensure that the information providers are accountable and responsive to those individuals designated to serve as the decision-makers, since mechanisms providing information that does not influence--due to its content or its timing--the nature and content of decision-making in the institution are of little practical value

The counterpart of the "soft management" functions are, obviously, the "hard management" functions, which includes tasks such as water development planning and construction, the regulation of water uses, and the operation of regional plumbing systems In interstate basins, these tasks are normally concentrated in the hands of either the Corps of Engineers or the Bureau of Reclamation In a few basins--most notably the Tennessee--these functions have been transferred to new regional entities, however, reorganizing the bureaucratic landscape to that degree is normally not politically viable, nor is it generally perceived to be necessary or desirable Instead, an increasingly common trend is to create and empower new regional water organizations with the authority to oversee and direct those entities that implement the hard management functions Water agencies and users in the Delaware River basin, for example, must tailor their activities to conform to the contours of the comprehensive plan developed by the Delaware River Basin Commission (ACIR, 1972) Similarly, the private and public entities that collectively control the operation of the Columbia River system must respect the flow regime and reservoir-

operating principles developed by the Northwest Power Planning Council (Volkman and Lee, 1988) This approach to institutional reform can allow the regional decision-making environment and the direction of regional water management to be fundamentally altered, without imposing significant and controversial reallocations of bureaucratic turf

The trend favoring the creation of coordination mechanisms to oversee--but not assume--the hard management activities of existing agencies has emerged, at least in part, from the realization that interagency and interjurisdictional coordination in a region generally does not occur until the fundamental inconsistencies between various water management programs and agency mandates are addressed (Feldman, 1991, Hatcher and Kundell, 1983) Coordinated and logically integrated policies are the key to integrated resource management, however, neither Congress, the Executive, nor the agencies themselves have been highly effective in resolving these inconsistencies And based on the national experience with most forms of coordination mechanisms, it seems clear that charging regional water organizations with resolving the observed inconsistencies in water management within regions is generally futile unless the coordination mechanisms are empowered to modify and integrate the broad policy frameworks that guide the actions of major actors in a region, or unless these inconsistencies are addressed in the authorizing legislation (or other form of agreement) establishing the new regional organization This observation reinforces the importance of identifying institutional weaknesses in a region and delineating the functions and operational attributes of proposed coordination mechanisms before initiating the structural design of the arrangement

2 Membership and Participation Once the functional responsibilities of the new arrangement are determined, it is possible to identify those jurisdictions and/or agencies that demand representation in the coordination mechanism Earlier in this chapter, the membership criterion was utilized to distinguish among the interstate, federal-interstate, and federal types of coordination mechanisms Which approach is best is dependent upon several factors, including the relative balance of state and federal interests in the basin, the nature of the organization's proposed functions, and the current trends in intergovernmental relations, federalism, and constitutional law Most of the modern coordination mechanism literature calls for federal-interstate arrangements, for both philosophical and pragmatic reasons (Light and Wodraska, 1990, McClure and Griffen, 1993) The sharing of powers between federal and state actors is consistent with prevailing norms of federalism, and also ensures that the states are not isolated from the considerable technical, financial and constitutional resources of the federal government

An equally important consideration is the type of actors selected to lead the organization The assumption that water agency officials should head regional coordination mechanisms has come under attack by many authors, primarily because many water management functions are not merely technical or engineering concerns, but involve issues with a significant economic and ideological content (Feldman, 1991) As Lord (1984 653) has observed "Bad water management often occurs when facts are confused with values when means are confused with ends, and when *technical judgments are made by citizens and politicians while value judgments are made by scientists and professionals*" (emphasis added) Along similar lines, recent publications of the Advisory Council on Intergovernmental Relations stress the value of establishing decision-making arrangements that provide meaningful roles for interest groups and the public in water resources planning

(ACIR, 1994, McDowell, 1994) These observations should influence the design of a coordination mechanism in at least two ways First, they suggest that the structural qualities of a mechanism should be dictated by the types of functions and responsibilities envisioned for the organization, and secondly, that the internal workings of the mechanism should feature "pathways" for the transfer of information and decision-making responsibilities among the different types of actors as needed

3 Operational Attributes The way in which an organization functions--i e , its *modus operandi*--is influenced by many factors, some of which can be unpredictable in nature and beyond the full control of the organization This includes such factors as a changing political climate, an interrupted or undependable source of financial resources, and the nature and magnitude of resource problems delegated to the organization The basic functioning of the organization, however, is something that can be, in large part, consciously designed in prospect

Generally, the most important design consideration is the selection of a decision-rule, since it is this rule that determines the relative allocation of power among members and that guides the selection of dispute resolution tactics and strategies (Wandschneider, 1984, Kenney, 1993) A rule of unanimity requires a reliance on negotiation, bargaining and compromise, while a majority-rule system supports an approach based on coalition building The importance and controversial nature of selecting the decision-rule should not be underestimated, especially in regards to how the proposed decision-rule will influence the political process associated with enacting the coordination mechanism [45] Only in those coordination mechanisms that are confined solely to apolitical and technical tasks, such as resource monitoring, can the issue of decision-rule selection be subordinated to other concerns [46]

In order for a decision-rule to have the intended effect on behavior both within the institution and the organization itself, it is critically important that the mechanism be vested with sufficient authorities, scope and resources to ensure that decisions are implemented, and of equal importance, to ensure that the organization cannot be easily bypassed by parties moving to other forums of decision-making If these conditions are satisfied, then the organization provides a strong incentive for participation, which as Ingram (1973, 1971)

---

[45]For purposes of institutional analysis it is useful to recognize the different levels of decision making within the American political system (Gregg et al 1991) As part of the National Drought Study the Advisory Commission on Intergovernmental Relations utilizes a tripartite system of constitutional collective choice and operational level rules (ACIR, 1994 McDowell 1994) The constitutional level rules are primarily specified in federal and state constitutions federal and state supreme court decisions, and other relatively stable agreements such as interstate compacts and treaties These rules establish the general framework of decision making utilized at the collective choice level, where federal and state legislatures and local policy making bodies establish programs and policies to address specific needs and to reflect prevailing public values At the operational level most rulemaking is accomplished by administrative agencies charged with the implementation of programs established in actions at the collective choice level

[46]When it comes to the nuts and bolts of designing the internal structure and functioning of organizations the recent literature on reinventing government ' is highly useful (Osborne and Gaebler 1992) Arguments in favor of decentralized and entrepreneurial public organizations are in most respects applicable to regional water organizations as evidenced by Albert s (1993) study of organizational reforms occurring within the Delaware River Basin Commission

observes, is essential if an organization is to make a major influence in an institution A related concern is the importance of ensuring that the involved parties have equal and abundant access to good information, a requirement that is normally best satisfied by organizations with independent staffs and an independent chairman (Gregg, 1993)

4 Types of Authorities Many coordination mechanisms fail because they have insufficient or inappropriate types of authorities to effectively accomplish their intended functions (Derthick, 1974, Gregg, 1993) While the reluctance of established jurisdictions to delegate broad authorities to new regional organizations is well documented and understood, it is equally clear that coordination mechanisms without formal authorities are ultimately constrained to the "soft management" functions--whether or not that was the intended outcome The widespread fear of creating authoritative regional water organizations is probably best overcome by removing the focus from "negative" powers (such as taxing or regulating existing water uses) to "positive" powers, such as establishing (and perhaps overseeing) new markets, modifying outdated policies, arbitrating disputes, responding to emergencies, ratifying and implementing new agreements, streamlining permitting processes, and related innovations that provide new and creative opportunities for efficient resource management

When delineating the authorities of a proposed organization, especially state-dominated organizations, it is important to be cognizant of the limitations imposed by the constitution (Kenney, 1993) Several features of the more authoritative organizations, including the Northwest Power Planning Council and the Delaware River Basin Commission, raise significant constitutional issues, generally concerning the constitutionality of allowing state-dominated forums to regulate the actions of federal actors This issue has been most directly examined in regards to the Northwest Power Planning Council, in which the Supreme Court has generally upheld the authority of the state-dominated forum to regulate the actions of the Bonneville Power Administration (Volkman and Lee, 1988) [47] The balancing of state and federal powers in the federal-interstate compact commissions has also been the subject of scholarly and judicial inquiry, where it has been generally accepted that the federal government cannot be bound to those decisions to which the federal representative does not concur--a limitation that has not proven problematic in practice (GAO, 1981)

5 Legal Structure A variety of legal devices have been used as the basis of coordination mechanisms, ranging from informal verbal agreements to federal-interstate compacts In between these extremes are devices such as formal interagency agreements, memoranda of agreement, multi-state resolutions and consistent multi-state legislation, interstate compacts, federal legislation, and court decisions, among others (Donahue, 1987) While the coordination mechanism literature dwells extensively on this component, few generalizations regarding the efficacy of various approaches can be supported The American experience with coordination mechanisms strongly suggests that the selection of the appropriate legal device should be primarily influenced by the factors of membership and

[47] Along similar lines the consistency provisions of the Coastal Zone Management Act which requires federal agencies to follow management plans developed by state agencies has also survived judicial scrutiny (Adams 1993) In a seemingly contrary decision however the courts have blocked western states from regulating emerging interstate water markets citing commerce clause restrictions (Sporhase v Nebraska 458 U S 941 (1982))

desired organizational authorities, factors which themselves are derivative of the delineation of proposed functions For these reasons, the selection of the legal structure for a coordination mechanism should be among the last considerations of the design exercise The importance of the selection, however, should not be underestimated

6 Financial Resources It is universally acknowledged that it is unwise to expect effective regional resource management to emerge from institutional arrangements that provide insufficient funds for governance, administration and field-level management activities, or from arrangements that rely on flawed formulas for the collection and distribution of financial resources Yet, many coordination mechanisms have been (and still are) beset with financial shortcomings, occasionally in a deliberate attempt to constrain the activity of the organization The selection of a funding mechanism is an important consideration in designing coordination mechanisms, and should only be initiated once the functional, operational and structural characteristics of a proposed coordination mechanism have been delineated

At least three major types of funding sources are available to regional coordination mechanisms direct appropriations, from both Congress and state legislatures, contributions, either voluntary or mandated, of personnel and other resources from participating agencies, and self-supporting arrangements, relying on user fees, bonds, or even direct taxes born by users of the water resource Broad trends in water resources management generally call for a continued shifting of the financial burden from the federal government to the states, as well as for a greater reliance on user fees, market mechanisms, and other strategies for self-financing Each approach has its own strengths and liabilities, and the ideal funding strategy for a given basin will likely feature a combination of these sources Direct appropriations are a common and philosophically acceptable funding source for many coordination mechanisms charged with managing public resources, however, this approach can result in regional organizations that are highly vulnerable to budgetary swings and overall public apathy, an important concern since most coordination mechanisms--especially those charged with regulatory functions--struggle to develop supportive constituencies (Derthick, 1974) Several mechanisms, including most types of interagency committees, depend at least in part upon member agencies for personnel and resources While this approach can provide a desirable element of accountability (to the member agencies) and flexibility, coordination mechanisms funded in this manner can suffer from being ancillary, and generally unprofitable, components of bureaucracies often only modestly concerned with regional coordination Those mechanisms with the independent authority to issue bonds, collect user fees, or even levy taxes are likely to enjoy a generally stable funding capacity, but establishing such arrangements are normally politically difficult[48] Furthermore, arrangements that rely heavily on user fees are likely to show a bias in favor of producing marketable commodities (such as hydropower) over non-market public goods (such as wildlife protection), a phenomenon that is often cited as a deficiency of many existing water

[48]The Tennessee Valley Authority the Northwest Power Planning Council and the Delaware River Basin Commission are among those organizations drawing funds from user fees Hydropower revenues are of particular importance in the Tennessee and Columbia basins in fact the vast majority of TVA s multi billion dollar budget comes from power revenues (Freeman and Lesesne 1981) The self financing strategies are normally not an option for mechanisms that do not have formal management responsibilities or authorities

institutions (Feldman, 1991) This leads to the equally important consideration of how a coordination mechanism spends its money, an issue best addressed in terms of operational attributes and functional responsibilities

Other Guiding Principles

Implicit in the methodological approach outlined in the preceding pages are several principles that should guide the design of new coordination mechanisms In the remaining pages, some of the more salient lessons drawn from the American experience with coordination mechanisms are more directly considered in light of modern trends in water resources management, leading to the identification of ten design principles (not commandments) that should guide future reform efforts The list is neither exhaustive nor exclusive, but it does provide a useful foundation upon which more detailed and case-specific investigations can be constructed

1 Consider Political Viability No factor is more important in the design of coordination mechanisms than is political viability (Derthick, 1974, Ingram, 1973) The majority of "ambitious" proposals fail due to their inability to survive the politics of enactment The common result is the creation of administrative arrangements without sufficient authorities to achieve the initial goals of the organization, which in turn, leads to the highly unflattering appraisal of most mechanisms In order for a proposed coordination mechanism to survive the politics of formation and to then function effectively in the basin, it is critically important that the existing institutional landscape is disrupted as little as possible As many authors forcefully argue, innovations should build on what already exists augmenting the positive features of the institution while addressing the major deficiencies Proposed innovations should also capitalize on crises whenever possible, an unpredictable but highly useful mechanism for overcoming the political obstacles to change [49]

2 Let Function Dictate Structure In the design of a coordination mechanism, the desired functions (and roles) of the mechanism should first be determined, and then structural qualities should be selected to support the mechanism's intended function--as is done in the recommended methodology Often this is not successfully accomplished, largely due to a political environment that tolerates the creation of organizations with broad and comprehensive mandates, while blocking the necessary transfer of authorities and resources to these organizations (Derthick, 1974, Martin et al , 1960) In other cases, the failure to correctly match function and structure is derivative of sweeping political trends that render a form impotent For example, the shift in national water policy from water development to management is often associated with the demise of the Title II Commissions, which featured memberships, authorities, and voting rules more consistent with the water development era (Gregg, 1989, ACIR, 1972) Arrangements that poorly match function and structure rarely provide any significant benefits to the institution, and can harm the political viability of future innovations

[49]Crisis and confusion are normally credited for the successful creation of the Tennessee Valley Authority (Selznick 1966 Derthick 1974) Perceived crises also played an important role in the creation of many other organizations including the Delaware River Basin Commission and the Northwest Power Planning Council (Kenney 1993)

3 Consider Broad Trends in Federalism and Intergovernmental Relations The changing nature of federal and state roles in water resources development and management have generally followed more universal trends in American federalism (Kenney, 1993, Dworsky, Allee and North, 1991) The most recent of these trends--affecting both interstate water management and federal-state relations in general--is "new federalism," a shifting of responsibilities (including financial) from the federal government to the states This suggests that modern coordination mechanisms should feature either a relatively equal balance of power among state and federal actors, or even state primacy in those basins with relatively minor federal investments and interests (Light and Wodraska, 1990) The distribution of costs and benefits of basin management should correspond to the distribution of authorities and responsibilities

4 Foster a Regional Perspective As Harrison (1981 431) has observed, "before a comprehensive basinwide perspective can become operational, i e , before constituencies exist to express it, they must perceive that the basin is a shared, finite resource and that they share responsibility for its stewardship " In the simplest terms, this requires that parties in one part of a basin realize how their patterns of water use affect parties in other parts of the same system The political value of a strong regional identity is discussed in Foster's (1984) research on the New England Basins, Bauer et al 's (1989) research on the Great Lakes and other basins, and in Glotfelty's recent comments regarding the Chesapeake Bay program, published in a report of the Energy and Environmental Studies Institute (1993) A strong regional perspective can be enhanced by a crisis having a regional or interjurisdictional quality, or more gradually by a deliberate public education campaign--a task often performed by the coordination mechanism itself

5 Utilize a Problemshed Orientation In many instances, hydrologically-defined regions such as river basins or watersheds have lost much of their original utility as management units due to interbasin diversions and other factors, creating regions described by Weatherford (1990) as "hydrocommons " Hydrologic constructs like river basins and hydrocommons often do not provide an adequate administrative unit, due to the spatial incongruence of water systems and the legal and political arrangements that affect their governance, administration, and management For this reason, it is generally accepted that coordination mechanisms in many cases need to be designed at regional scales based on functional criteria, a region defined by Lord (1982) and others as the problemshed

> It is true that water flows downhill, and it is also true that much of our water use technology relies heavily upon this evident tendency As I have acknowledged, it is these simple and basic facts that have given rise to the fruitful idea of unified river basin management But they have also diverted attention from the basic reality that all problems are human problems, even those which we choose to call water problems It is the human problem-shed we should seek to manage, not the watershed

6 Utilize a Process Orientation Since the goals and objectives of water management programs are dynamic and highly political, it is important to design coordination mechanisms that provide effective processes for goal-setting and decision-making, rather than establishing mechanisms designed exclusively to pursue pre-determined

and inflexible objectives (Harrison, 1986, Fox, 1976) The processes should be highly democratic, emphasize participation and value-pluralism (i e , accommodate divergent actors and value structures), provide accurate and relevant information to all participants (including monitoring and feedback), and provide mechanisms of accountability (Kenney, 1993, Harrison, 1986) As part of the National Drought Study, the Advisory Commission on Intergovernmental Relations has identified several regions utilizing processes of this nature (ACIR, 1994) [50]

7 Recognize the Importance of Conflict Resolution While it is true that incompatible programs and policies among agencies and political jurisdictions are occasionally the result of a failure to communicate, these deficiencies are more commonly associated with divergent groups pursuing divergent objectives Consequently, "coordination" is often more a process of conflict resolution than simply communication Effective coordination mechanisms, therefore, are generally those that provide processes for debate and education, explicit bargaining, and collective decision-making arrangements that feature enforceable and generally positive-sum outputs (Kenney, 1993) The mandate and authorities of the coordination mechanism should also hinder "end-runs"--i e , parties seeking decisions in other forums (e g , Congress or the courts) rather than via the coordination mechanism Arrangements lacking these features do not provide sufficient incentives for participation

8 Do Not Burden Administrative Bodies with Fundamental Policy Issues In several basins, coordinated resource management is often impeded by fundamental disagreements about how the resource is (or should be) utilized and allocated among functions and jurisdictions In basins featuring fundamental conflicts of this nature, it is normally impossible to create regional water organizations with sufficient independent policy-making authority to resolve these divisive issues--although such organizations can assist in the negotiation of potential or partial solutions (Wandschneider, 1984) These fundamental issues must normally be resolved in more traditional forums, using more established mechanisms (Erhardt, 1992) Once these fundamental issues are resolved, regional water organizations can be highly effective in implementing agreements in a creative and technically-sophisticated manner--qualities normally absent in those forums where fundamental apportionments are fashioned [51]

---

[50]Perhaps the best example of public participation and information sharing in a water planning process can be found in Boston where the Massachusetts Water Resources Authority (MWRA) provides financial support and raw technical data to an independent body of citizens interest groups and water users known as the Water Supply Citizens Advisory Committee (WSCAC) In return the WSCAC has consistently provided the MWRA with creative and politically sensitive water policy recommendations Along similar lines Washington state s recent Chelan Agreement" has established a State Water Resources Forum to advise state policymakers The Forum facilitates direct negotiations among stakeholders with an interest in water management and is expected to promote cooperation and progress in state water management

[51]This lesson is largely drawn from the experiences in the Delaware Columbia and Potomac basins In the Delaware creative and effective regional management of the resource did not evolve until the Supreme Court addressed the fundamental issue of interstate apportionment opening the door for more incremental and technically sophisticated management by the Delaware River Basin Commission (Kenney and Gregg 1991 Lord and Kenney 1993) In the Columbia Basin sophisticated resource management did not emerge until the fundamental and highly divisive issue of reservoir operations was addressed in congressional legislation that asserted that fishery interests had to be explicitly considered in operating regimes normally

9 Design Mechanisms for Accountability As Harrison (1986) and many scholars argue, one of the major deficiencies associated with fragmented water institutions is a lack of accountability If no single entity has clear responsibility for the overall management of a regional resource, then it is impossible to hold anyone accountable for observed deficiencies In order for a coordination mechanism to provide this element of accountability, it must possess functional and structural features which allow it to effectively function as a forum of debate, conflict resolution and implementation This can include requiring that decision-makers be elected officials, a feature often accomplished by vesting formal voting authorities with state governors [52]

10 Promote Flexibility and Creativity Many coordination mechanisms have featured memberships or processes that did not encourage creative approaches to problem definition or resolution In particular, many arrangements have favored structural (i e , project oriented) and regulatory approaches for dealing with water problems, when non-structural and market-oriented approaches promised to provide results with greater efficiency and equity [53] Feldman (1991), Harrison (1986) and Kenney (1993), among others, attribute this partly to the delegation of policy-making authority to water development agencies which have a direct stake in the strategies utilized for problem resolution A coordination mechanism that lacks the functional and structural qualities necessary to pursue and implement creative solutions is likely to be ineffective in the modern era of resource management, where both water and financial budgets are increasingly difficult to balance

## Concluding Thought

One of the most common themes permeating the literature reviewing coordination mechanisms for interstate water resources is that the track record of these institutional innovations is generally poor This should not discourage further innovation, however Addressing the factors that fragment regional water institutions is an extremely difficult task, and a task normally attempted with a new coordination mechanism only after more established approaches have failed And in those basins where a coordination mechanism has not successfully resolved the major water resource problems, the mechanism has

---

driven solely by hydropower concerns The decision cleared the path for the creation and operation of the Northwest Power Planning Council (Gregg et al 1991) In the Potomac Basin increased systemwide water yields through improved reservoir operations were achieved only after it was agreed that shortages (and the risk of shortages) would be shared equally (Steiner Holmes and Schwartz 1988)

[52]Over the past fifty years it has become increasingly common to place governors (and other elected officials) in key positions in regional water organizations an innovation probably derivative of the poorly regarded performance of basin interagency committees headed by agency officials This trend is normally praised in the scholarly literature (Harrison 1986 Kenney, 1993 Feldman 1991)

[53]In no basin has the potential of non structural' innovations been better illustrated than the Potomac In that basin the reservoir operations scheme developed and implemented by the ICPRB has increased the overall system yield by over 50% while satisfying instream flow and water quality objectives In contrast the structural solutions proposed earlier by the Corps of Engineers promised an increased yield of only 42% through the construction of as many as 16 major projects with cost estimates ranging from $200 million to $1 billion (IWR 1991)

generally not been a step backwards--but just a discouragingly small step forward Thus, most mechanisms have proven to be unsuccessful only in the sense that they have failed to satisfy lofty expectations If a more tempered enthusiasm for such efforts is utilized, then the track record of coordination mechanisms is significantly improved, and proposals for further experimentation will be evaluated in a more forgiving and welcoming political atmosphere

Note This file is called a consult1 doc and is on the WWPRAC 1 disk This report was pulled from the full ACT/ACF Phase 1 Report