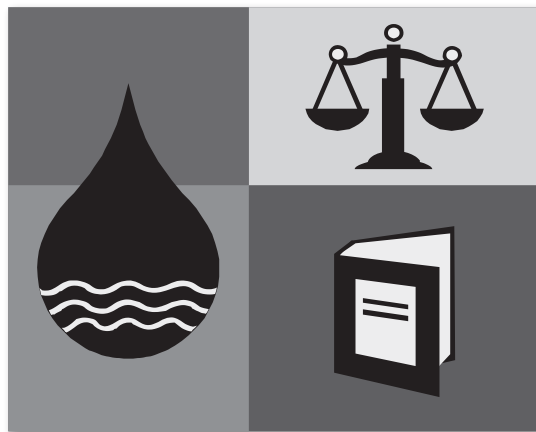


# **NORTHWEST WATER POLICY & LAW SYMPOSIUM**



## **Policy White Paper**

Bozeman, Montana  
December 2006



## SUMMARY

Participants at the September 2006 *Northwest Water Policy & Law Symposium* discussed three water issues handled by state and local governments, and identified potentially-useful policy approaches. Managers of water infrastructure would benefit from incorporating conservation measures, expanding the funding base and developing new funding mechanisms, adhering to rational ranking and cost/benefit principles, and continuing education for traditional and non-traditional customers. Those whose decisions are influenced by the surface water/ground water relation must have at their disposal good data defining the water resource. Policy makers should consider the cumulative hydrologic impacts of permitting decisions. Adoption of offsetting measures for new ground water withdrawals would be of benefit in many jurisdictions. To help resolve the clash between land- and water-use regulations, development permitting authorities must know *a priori* both the physical and legal characteristics of the water resource designated to serve new development. The integration of land-use and water planning is crucial. *A sine qua non* for rational land use decisions is the final allocation - the adjudication - of legal water rights.

## INTRODUCTION

In September, 2006, 150 experts convened in Bozeman, Montana to discuss water issues with urgent policy ramifications for the Northwestern states. They represented state and local governments, universities, agricultural water users and non-governmental organizations. Their purpose was to define the nature of each issue and explore potential policy responses. All the matters discussed have regional or national aspects, and were selected for deliberation because they are largely influenced by policies established at the state or local level. Although the details differ among states, the basic framework of water law in the Northwestern states allowed for fruitful comparison and sharing of experiences and observations among symposium participants from several states.

The symposium focused on three water topics that are currently pressing for Northwestern policy-makers:

- **Publicly-owned water storage and conveyance facilities urgently need attention.** Most of these were constructed 50 or more years ago by the federal government, to supply irrigation water or generate power. Many have come to provide benefits in

the form of flood control, municipal water supply, recreation and fish & wildlife habitat. The federal government has largely relinquished its management of water infrastructure to the states, and so upkeep of decaying water projects, construction of new projects and decommissioning of projects to serve ecological and economic ends are being conducted with insufficient resources and little integrated planning.

- **The relationship between surface water and ground water** is a vital topic for Northwestern policy-makers, not just hydrogeologists. Problems with new ground water exploitation infringing on old surface water rights are widespread. Local officials everywhere must weigh the effects of new water-use proposals, balancing the interests of multiple right-holders in the face of scientific uncertainty.
- **Land-use regulation often conflicts with water policy and regulation.** The conflict is manifest in many ways, including legal well exemptions with severe cumulative effects, development permitting that precedes proof that water is physically and legally available, and large-scale change from irrigated agriculture to urban and suburban environments that alters the local hydrogeology, creating unanticipated and unintended 'winners' and 'losers.'

The symposium deliberations did not attempt to reach consensus on questions of values, so there was not necessarily agreement among participants about the general thrust that policy should take. Instead, the focus was identifying specific policy tools that could be useful, given community or state goals. For example, participants did not debate the desirability of maintaining existing water infrastructure, but identified potential new ways to prioritize and fund infrastructure upkeep. Nonetheless, many of the recommendations that follow are likely to be controversial. For individual communities, managing disagreement and moving forward will require bringing all relevant stakeholders into problem-solving dialogue with a full range of elected and appointed officials. A firm basis in science that is agreed to by all interests must underlie difficult policy decisions.

The symposium was convened by the Wheeler Center for Public Policy at Montana State University, the Montana University System Water Center, the Inland Northwest Research Alliance and the Cinnabar Foundation. On the following pages, the organizers have tried to distill the essence of very rich discussions into usable guidance for Northwestern policy-makers. We sincerely hope that the observations and recommendations shared by

symposium participants prove helpful to their colleagues in other states. And, if that proves to be the case, we hope to see other gatherings tackle the difficulties posed by instream flow issues, TMDL requirements, interstate water conflicts...there is no shortage of water policy challenges in the Northwestern United States in the 21<sup>st</sup> century.

November 2006  
Bozeman, Montana

This document, the symposium agenda, lists of presenters and participants, keynote addresses by Larry Susskind and Dan Tarlock, summary comments by Gordon Brittan and related materials are available electronically at <http://water.montana.edu/policy/post/>.

## WATER INFRASTRUCTURE

### Problem Statement

There are several aspects to the infrastructure challenge faced by the Northwest. Most state- and federally-managed water infrastructure is at least 50 year old, and now needs major and costly repair to continue to function, let alone prevent serious risk to downstream communities or resources. In addition, physical and cultural changes have shifted some infrastructure management objectives. A warming climate means the balance between rain and snow is shifting, and spring runoff occurs earlier and more rapidly than was the case when most water infrastructure projects were constructed. Rapidly expanding urban and suburban populations increasingly compete with traditional agricultural use of stored water. Scientific investigation has exposed unexpected environmental consequences, and society increasingly assigns higher value to the retention of native species and ecosystems than it did 50 years ago. Unarguably, water storage and conveyance projects are harmful to some native species.

The federal government has longstanding policies addressing the operation, maintenance and repair of federal water infrastructure, but those needs have been insufficiently funded for many years. No integrated policy balances the costs and benefits of maintaining infrastructure, constructing new water projects and decommissioning old projects. Local constituencies advocating upgrades of water projects sometimes secure funding through the federal earmark appropriation

process, but this *ad hoc* approach does not necessarily target the most worthy projects and it does not begin to serve the overall regional need.

A similar situation prevails at the state level. Although states periodically evaluate and rank their water projects, most activity is crisis management. Insufficient funding must be devoted to repairing infrastructure that is at imminent risk of catastrophic failure. New projects are rarely constructed, ecologically-damaging projects are rarely decommissioned and large maintenance backlogs continue to accumulate. In most cases, transfer of infrastructure ownership to the water users is not a solution. Irrigation districts are not equipped to own and manage water projects of more than very modest scale, because of their cost and liability. The difference between the cost of infrastructure and the financial return on irrigated crops speaks for itself.

This *de facto* water infrastructure policy—the absence of an integrated policy and the pronounced shortage of funding—has the effect of discouraging food production in a region that has historically been dominated by irrigated agriculture. Indeed, Dr. Donald Worster, in the address opening the symposium, predicted that by the end of this century, much large-scale western water infrastructure will have fallen into decay, and will be no more than a curiosity to be visited by tourists.

Two additional characteristics of the infrastructure challenge should be noted. First, the financial constraints, isolation and complex administration of tribal governments mean that Indian reservations suffer disproportionately from the rest of the region. And second, because of high stakes—the enormous resources at issue and the economic and ecological ramifications of land use change—northwestern infrastructure deliberations are intensely political. Discussions about steel and concrete are ultimately discussions about allocating inadequate resources among contending interests that touch the most deeply-held values of the citizens of the Northwest.

### Policy Recommendations

Two overarching principles were readily agreed upon: solutions must be site-specific, and they will require much greater resourcefulness and a broader array of tools than those mobilized around water infrastructure in the past. Specific points include the following.

**Conservation.** Greater water efficiency and conservation must help offset the construction of new storage. Conservation is frequently the first and least expensive step to stretch municipal water supply. It is not a panacea, however, and efficiency in one part of an operation may impel a water user to apply the ‘saved’ water elsewhere, resulting in no net decrease in use. Conversion from flood to sprinkler irrigation, for example, may result in expanding the total acreage to be irrigated.

**Payment Schemes.** The Northwest needs new ways to pay for its water infrastructure. Non-traditional tools might include financial incentives from conservation easements for projects with major fish and wildlife benefits, recreation fees on reservoirs favored by anglers and boaters, and utility fees from retrofitting power generation into existing dams.

A Congressionally-established revolving loan fund for non-federal water infrastructure projects could play an important role, modeled on successful programs administered by states under the aegis of the Clean Water Act for wastewater infrastructure, and the Safe Drinking Water Act for public water systems.

**Governing Structures.** To maintain or upgrade large projects, all stakeholders could be included by forming regional water authorities. Recruiting water groups who were not identified or even existing when the water projects were built is a way to spread costs over a larger base and generate greater political energy. What was originally an irrigation project, for example, may now provide substantial ancillary benefits to a municipality or an endangered species. Formation of regional authorities may require state enabling legislation.

At all levels of ownership—federal, state or local—funding is hard to come by, and only the most critical expenses will be paid. Infrastructure-owning authorities should develop and apply clear criteria to rank the maintenance and repair of existing infrastructure, assess the potential of new projects, and evaluate the merits of decommissioning old projects. Assessing costs and benefits is especially critical when considering decommissioning existing projects, where money and engineering may be the least important driving factors.

**Education.** More education and training programs are needed. For example, irrigation districts have identified business planning and the use of contingency funds as subjects they need to master. Statewide dam-and-canal-owner associations would be appropriate forums for such activities.

## SURFACE WATER AND GROUND WATER: THEIR RELATION IN NATURE AND POLICY

### Problem Statement

In the developing but mostly-dry Northwest, demand for water has increased to the point of stressing both surface and ground water resources. In most of the region, fresh waters, whether above or below ground, are one interconnected resource. However, this interconnectivity is not well-defined in states’ regulatory frameworks for consumptive and non-consumptive water use. State laws may acknowledge the physical connection, but the associated regulations frequently do not, and surface and ground water are often managed at cross purposes.

The difficulties caused by inconsistent water policy and law for surface and ground water are currently being exacerbated by shifts in water use, including:

- the advent of sprinkler technology, which affects return flows far differently than the flood irrigation that it supplants,
- the permitting (or *de facto* permitting) of innumerable new domestic wells, without accounting for their cumulative draw on aquifers and indirect effect on surface waters,
- permitting new groundwater uses, for both irrigation and residential purposes, without requiring mitigation for its impact on surface water supplies, and
- urbanization, with diversion of former irrigation waters to municipal uses that do not recharge aquifers.

Poor or absent integration of water resource planning with land planning complicates the ground water/surface water challenges (see following section).

To some degree, these challenges represent the natural lag of policy behind scientific advancement. Because it is hidden from direct observation, our understanding of ground water hydrology is relatively recent, and in many basins it is not sophisticated. Thus, there is a substantial gap between science and policy in this area. At this point in time there is little flexibility in our legal system to adjust to changes in our natural system.

## Policy Recommendations

Forty experts with academic, legal, economic and management perspectives contemplated policy responses to the ground water/surface water conundrum. They called for policy makers to “write a new book” with a new set of management rules. Their consensus was that water availability studies need to consider not only the amount of water impacted by a proposed action, but also the timing and location of impacts. For example, the timing and location of ground water-withdrawal impacts on surface water can be very different depending on the depth of the well, the lateral distance to surface water, and the pumping rate.

In the Northwest there is not enough water for every desired use, and policy choices must consider not only the water itself, but also a suitable balance among economic, social and environmental effects. A prerequisite to developing thoughtful policy and regulation in this area is an integrated program of ground-water mapping in the most water-short and development-prone areas. States and counties need to fund studies in a consistent manner, starting where water supplies are under pressure. Decision-makers need to assure that water studies are completed in every basin prior to significant development, and that good data drive the public process.

Related recommendations are to:

- Ensure that new groundwater pumping does not reduce surface flows, by employing tools such as managed recharge rights, ground-water augmentation, ground-water mitigation, and water banking, which are all different ways of retiring surface water rights and reassigning their use to mitigate the impacts of pumping,
- modify “exempt” well allowances from water-right permitting by reducing the exempt volume (in Montana, 10AF to 1AF for indoor and outdoor use),
- study the controlled ground water areas option and consider conjunctive management opportunities, in order to protect streamflows while allowing for new ground water development,
- provide incentives for landowners to protect instream flows and manage their wetlands to sustain return flows,
- modify the timing for permitting of subdivisions with water rights by requiring physical and legal

evidence of available water early in the development process; require developers to pay for water studies at the beginning to expedite the process,

- carefully quantify return flows from agricultural water use and domestic use, which vary greatly,
- locate discharges of treated wastewater downstream of domestic withdrawals through good planning,
- require xeriscaping; place more burden on developers to plan for water recapture and conservation,
- staff state and county agencies appropriately to collect credible information for water availability studies,
- better utilize the capabilities of universities to perform water availability studies and to survey landowner opinions, needs and capabilities,
- manage water quality and water quantity collectively, not separately,
- treat wastewater for reuse, and
- create regular, dialogue-rich water policy forums to assist water users and members of the public to understand the complexities of the issues and the different interests involved.

Clearly, some of these recommendations are of very broad scope, while others would only be appropriate in specific circumstances.

## WATER REGULATION VERSUS LAND-USE REGULATION

### Problem Statement

A casual visitor to the Northwest, seeing sprinklers irrigating vast areas of cropland and large subdivisions near a flowing stream on a summer day, would find it hard to understand that growth and development are severely constrained here, and would likely be perplexed at the animosity shown toward proposed developments of any scale. And that visitor would almost certainly be confused about the convoluted and largely subjective process county commissioners go through to make their final determinations regarding development.

As the Northwest develops, there is increased focus on the effect of development on the availability and use of water. At present, there is poor integration of land and water use policy to help planners and policymakers make determinations or decisions about the resource.

Permitting of projects often precedes planning. This is especially true where no comprehensive land use planning has taken place. Public agencies sometimes work at cross purposes, often because they are required to do so by conflicting statutes. The result of this policy disconnect is poor decision making, conflict within and between the public and private sectors, and environmental and economic disruptions.

## Policy Recommendations

In order to protect water supplies for current water users, there must be rational long-range decision-making by policy makers. Rationality serves, not as a tool to limit growth, but as a springboard from which to make accurate and defensible decisions about new development using scientific methods. Potential policy approaches and ideas identified during the symposium are listed below.

Given the effects of chronic drought, along with predictable hydrologic changes resulting from global warming, it is imperative that western policymakers have a broad and deep knowledge of the availability of water and the interrelated complexity of water systems in their area. The ability to measure, combine and store that information already exist.

Conceivably, this scientific assessment of the availability of the resource would help unite planners and policymakers at all levels, and reduce confusion. Inter- and intra-agency disputes would be much less likely to occur with an accurate and current picture of how much water is available in what places.

Inherent in this process is the final allocation of water rights. Each state in the Northwest allocates those rights in slightly different ways, but a final accounting of who has the right to how much is the first step of the process.

Comprehensive, statewide land-use planning, with local/county flexibility, is also a part of this bigger picture and should be implemented and integrated with water use planning. Sewer, drinking water and irrigation districts should be part of this integrated planning. Private water brokers could help facilitate the transfer of water rights. In Oregon, where close attention has been paid to water planning, both municipalities and irrigation districts must prepare water conservation plans under Department of Water Resources guidelines. State agency decisions must be consistent with local land

use plans. Yet another tool to provide consistency in planning is requiring long term capital improvement plans for all infrastructure investments consistent with land use plans so that the infrastructure needed for new development matches water availability.

The culture surrounding land development must also be addressed. The process for decision making should be understood and agreed upon between agencies at all levels of government. Developers have a special responsibility to follow the process, and may be asked to help finance water development, along with other water users, in agreed-upon ways. Conversely, greater consistency in rulemaking should benefit developers.

They also benefit from the availability of planning devices such as transferable development rights. TDRs sever the development value of the land from the physical parcel. The parcel remains undeveloped or status quo, but the owner can credit its development value to another tract of land and build a more dense project than applicable zoning regulations would otherwise allow. TDRs are used in both urban and rural—open space preservation—settings.

When an individual development is considered for permits, its ultimate effect on the aquifer must be considered. Subsequently, regulations must be enforced, even when existing mechanisms for enforcing water rights are expensive and cumbersome. Mistakes by developers should carry stiff fines.

The population of the Northwest is changing rapidly and will continue to grow. There is an ongoing need for education on water issues: for developers, for buyers and sellers of land and homes, for agency personnel, and for the general public.

A number of issues remain without satisfactory policy tools, in the view of symposium participants. Of concern are the water rights of farms and ranches. In many jurisdictions, water rights can be separated from land, such that it is no longer suitable for agriculture. What impact does that have on the larger community? Under what conditions can or should water be tied to land? If a family wishes to sell land or water to a developer, can conservation easements and public conservation trusts adequately protect all the resources? And who decides what's worthy of protection? These policy questions are, ultimately, values questions.

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