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Sustainable Water Policies in the Rocky Mountain West: An Action Agenda

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Policy Paper

SUSTAINABLE WATER POLICIES IN THE ROCKY MOUNTAIN WEST: AN ACTION AGENDA

Sarah Bates, [Western Progress](#)

Review Draft, May 15, 2008

INTRODUCTION

The Rocky Mountain West is thirsty. And its limited water resources work very, very hard.

Snow blankets the spine of the continent, melts into headwater streams that flow to mainstem rivers, and snakes through dry desert canyons on its way to the ocean. On its journey, the water is dammed and diverted, piped over great distances, and put to work to meet diverse and growing human needs. Western sage Wallace Stegner observed, “Water is the true wealth in a dry land; without it, land is worthless or nearly so.”

Historically, many of the choices made about managing this precious resource have not adequately reflected its value. Legal rules developed during the Gold Rush provide important protection for established water users but do not take into account changing public values for water or the health of the rivers and aquifers from which water is drawn. Priorities for development often leave until too late consideration of the reliability of water supplies to serve new residents—let alone a meaningful analysis of the impacts of obtaining water from various sources.

At the heart of the matter, as Marc Reisner artfully observed in his book *Cadillac Desert*, westerners have lived in a state of denial about the region’s aridity, establishing a society whose “very existence is premised on epic liberties taken with water.” Today, it appears, the bill for this extravagance is coming due, and westerners face important choices about how to live in an arid landscape.

It is increasingly common to see today's challenges presented as a looming crisis in western water—a coming drought of near-biblical proportions. But this is also a time of opportunity, a chance to adopt a variety of policy reforms to encourage water conservation and re-use, carefully crafted water transfers, and restoration of aquatic ecosystems. In short, this could be the dawn of a new era of western water management, a time of adapting our lifestyle to fit the realities of our homeland rather than forcing the landscape to bend beyond its capacity to meet our needs.

THE ROOTS OF CONFLICT

Among many quotes attributed (in this case, erroneously) to Mark Twain, one of the most frequently repeated in the arid West is, “Whiskey is for drinking and water is for fighting over.” No less a truism is the assertion that “Water flows uphill to money.” Indeed, water—and the mighty battles and empire building inspired by its scarcity in the West—has sparked its own literature, legal and technical disciplines, and cultural traditions. No one, it seems, is dispassionate about water.

Today's water disputes are deeply rooted in historical circumstances and practices. As explained in the Western Progress policy report [A New Western Water Agenda](#), the rules governing water use trace back to the mining camps of the nineteenth century. Modern water law includes a strong federal regulatory component, some level of protection for instream flows, and consideration of public values for water and related resources.

Despite these changes, western water policy remains fundamentally anchored in the idea that water will be available wherever and whenever it is needed. The ambitious spirit of the Reclamation Era lives on in the multi-pronged efforts of Las Vegas to obtain water to satisfy one of the fastest-growing metropolitan areas in the United States. At the right price, the thinking goes, there is always more water to be had. And, with very few exceptions, that has so far been true.

Increasingly, however, reaching for “new” water means stepping on someone else's interests—boaters and anglers who don't want to see river flows depleted, farming communities disturbed by dried-up land as irrigators sell their water rights to distant cities, and rural homeowners whose wells run dry when too many neighbors tap into the same source of ground water. The battles extend beyond state lines, as witnessed by a dispute before the U.S. Supreme Court pitting Montana against Wyoming over the modest flows of the Tongue and Powder rivers.

Most significantly, perhaps, the players have changed in the western water wars. Early water disputes were settled by irrigators armed with shovels or shotguns facing off across a ditch. Later these conflicts were resolved in administrative procedures or court proceedings, but the parties remained the same—those who held legally recognized water rights, sorting through their competing interests in what essentially functioned as a risk-sharing enterprise. Today, such proceedings involve parties representing all manner of public resources (fish, wildlife, water quality, recreation, and both rural and urban

communities), who previously would have been recognized, if at all, as “third-party” interests.

DRIVING FORCES FOR CHANGE

The key driving forces for change in western water policy are population growth and climate change.

The Rocky Mountain West is one of the fastest growing regions in the country, and six of the ten fastest growing states are located in the persistently water-short Colorado River Basin. Most of the region’s water withdrawals are for agricultural irrigation, but an increasing share is devoted to watering bluegrass lawns and filling the swimming pools of Sunbelt migrants. And, although western cities have embraced conservation programs and water-wise landscaping in a big way, several western states have per capita water use rates far above the national average.

In brief, the region’s limited water supplies are already in short supply and are sought out by more and more people moving to the Rockies. What could possibly make the situation tougher? The answer: Warming temperatures and diminished water supplies.

A stream of scientific studies in recent years concludes that global climate changes are already impacting western water resources. A 2007 report of the Intergovernmental Panel on Climate Change concludes that the earth’s surface temperature has increased over the past century, and that the trend is toward higher temperatures and greater variability in precipitation. ([IPCC, *Climate Change 2007—Impacts, Adaptation and Vulnerability*](#)) The IPCC predicts that this temperature rise will result in more extreme weather conditions (heat waves, hurricanes, floods), increased evaporation from reservoirs, and decreased snow cover, glaciers, and ice caps.

The next phase of IPCC reporting will focus on regional impacts of climate change, including predicted conditions in particular river basins. This information—so essential for assessing adaptation strategies—is devilishly hard to pin down, given the broad parameters of climate change modeling and the variability of global weather patterns.

We do know that the key impacts of climate change in the Rocky Mountain West will be reduced water availability during the summer months when both demands and vulnerability are highest. Already, snowlines have moved to higher elevations throughout the region, and spring runoff is occurring as much as three weeks earlier than just fifty years before. Increasingly, the pattern of runoff is influenced by rain falling on snow, creating new patterns of fall and spring flooding. The Natural Resources Defense Council’s report, [Hotter and Drier](#) (2008), states the situation succinctly: The Rocky Mountain West is the “epicenter of warming in the contiguous United States.”

The warming signs extend far beyond the desert Southwest. In 2007, for example, western Montana experienced record high temperatures, resulting in lower-flowing,

warmer streams, which threatened the survival of native fish. These conditions prompted the state to impose fishing restrictions and prohibitions in the most popular and sought-after stretches. Local outfitters, guides, and tourist related businesses all suffered economic losses as a result of these closures. Elsewhere, marina owners have had to extend boat ramps over vast expanses of newly exposed lakebed—a trend well-documented in Lakes Powell and Mead, but also occurring in Montana’s Fort Peck Lake on the Missouri River.

Even with the abundant snowpack of the 2007-08 winter, the region’s thirst continues to grow. Climate scientists caution the public and policy makers not to confuse “weather” with “climate,” pointing out that the larger trends of warming and drying will not be reversed by a single year or two of normal precipitation. The eight major water agencies that recently announced formation of the [Water Utilities Climate Alliance](#) express no doubt that the time to act is now.

Today’s debate focuses not on whether the region is warming, but on what to do in response to the changes already underway. Some water managers urge construction of new dams and other types of water storage facilities, expressing concerns that precipitation arriving earlier in the year must be held for use when demands rise later. But close attention to the current predictions reveals that we cannot build our way out of this crisis. Higher temperatures mean higher evaporation—so “new” water stored in mainstem reservoirs may be lost more quickly than it can be delivered to thirsty fields or urban customers. Accordingly, the IPCC concluded, “Adaptation options designed to ensure water supply during average and drought conditions require integrated demand-side as well as supply-side strategies.”¹

Moreover, moving water over long distances is expensive and consumes a great deal of energy, as documented in the 2004 report by the Natural Resources Defense Council and the Pacific Institute, [Energy Down the Drain](#). For the most part, policy makers have not considered the energy impacts of proposed water supply projects. Desalination and pumping water over mountain ranges may not only be the most expensive options for supplementing water supplies; they may in fact exacerbate the impacts of climate change and thus create more shortages in the future.

In sum, the driving forces outlined here challenge our assumptions about the landscape of the Rocky Mountain West, and all the laws and policies premised on those assumptions. The very idea of a “normal” water year has shifted. What we may have declared a drought in the past is more likely a typical condition in the future.

¹ IPCC, *Technical Paper on Climate Change and Water* (April 9, 2008).

A BLUEPRINT FOR SUSTAINABLE WATER POLICIES

Climate change challenges the traditional assumption that past hydrological experience provides a good guide to future conditions.

(IPCC, April 9, 2008)

Our results are not good news for those living in the western United States.

(Scripps researchers reporting on “Human-Induced Changes in the Hydrology of the Western United States,” *Science* (Feb. 22, 2008))

Today’s western water crisis is both a daunting challenge and an unprecedented opportunity for action. Once-obscure water scholars suddenly find themselves sought after for information, predictions and suggested policy changes as public awareness grows—fueled by national media attention and visible reminders of persistent water shortages and warming temperatures. The time is ripe for meaningful consideration of a number of policy reforms to help the Rocky Mountain states cope with the changes already underway.

Most importantly, policies for a sustainable future must start with a fundamental recognition of the precious nature of western water, and a determination to make the best possible use of this limited resource. Water management strategies should look ahead—not backward—and incorporate opportunities to learn from and adapt to changing conditions. It is no longer wise or prudent to assume that historical conditions can be maintained into the future.

For decades now, forward-thinking water experts have come together periodically and hammered out remarkably similar agendas for water policy reform. Gatherings as diverse as the National Water Commission, the Western Governors’ Association, the Longs Peak Working Group, and the Western Water Review Advisory Commission all called for changes in state and federal policies to respond to evolving public values, protect important rivers and ground water resources, and coordinate management among diverse public agencies. Some of these ideas are already finding their way into law and agency practices, but many are still classified as “recommendations”—well-considered, but untried.

Last fall, Western Progress convened leading water experts in Boulder, Colo., to review common threads of past recommendations and to explore opportunities for meaningful western water policy reform in the face of today’s major challenges. Their discussion spawned the Western Progress policy report [“A New Western Water Agenda: Opportunities for Action in an Era of Growth and Climate Change.”](#) by Denise Fort and Lawrence MacDonnell. An appendix to the report summarized the policy reform proposals listed above.

The recommendations emerging from this process highlight some encouraging areas of progress already underway, as well as areas in which public attention needs to focus.

These broad guidelines provide a framework for the sustainable water policy action agenda that Western Progress is pursuing:

Strengthen and expand water conservation and efficiency programs: Reducing the demand side of the equation is less expensive and environmentally damaging than seeking “new” water to satisfy growing populations. See the recently released [grand jury report to the City of San Diego](#) for a forceful argument in favor of permanent, far-reaching water conservation strategies. Already, consumers and utilities understand the long-term cost savings of more thrifty water use.

Policy options:

- Water providers incorporate pricing incentives (e.g. tiered block structures) to encourage more widespread adoption and enforcement of efficient water use
- Municipal codes include provisions allowing and encouraging broader use of recycled water for reservoir augmentation, landscape irrigation and other appropriate applications
- Water “duties” for existing uses strengthened and enforced
- Universal water metering and public information on conservation options

Integrate water planning with growth management and land use planning: For too long, we’ve decoupled decisions about land use and growth from water planning. States and local leaders are beginning to look at the broader consequences of growth, focusing particularly on the reliability of projected water supplies. In the 2008 session, the Colorado Legislature enacted [H.B. 1141](#), aimed at ensuring that adequate water is available before new developments are approved, an important first step in this direction.

Policy options:

- Statutory requirements of sufficient “wet” water available before new developments are approved (e.g. require proof of 20- or 50-year water supplies from existing, sustainable sources)
- Mandatory review of alternative water sources, including assessment of the economic and environmental costs of each (including carbon footprint of various water supply options)
- Comprehensive land-use plans include meaningful water element
- State water plans coordinate with local land-use priorities

Improve the process for transferring water from agricultural to urban and environmental uses: With millions of acre-feet of the region’s water now used in irrigated agriculture, transfers to urban uses are sure to continue. The processes for these transfers could be improved considerably, including provisions aimed at keeping farmlands in production and mitigating the negative impacts on agricultural communities.

Policy options:

- Clarify relative rights of existing water users, through comprehensive adjudications of water rights in rivers and groundwater basins, including settlements with Native American tribes holding reserved water rights
- Improve mitigation measures for water transfers (e.g. Colorado statutes)

- Require explicit consideration and protection of riparian zones, wetlands, and instream flows when water is moved off-site; consider “environmental tax” (e.g. Oregon statutes)

Expand and enhance state instream flow programs: Changes in precipitation and snowmelt threaten the region’s rivers and streams—already vulnerable to significant depletion from existing water uses. Maintaining and restoring healthy aquatic ecosystems will protect economically beneficial fisheries and recreational resources, and will provide a critical buffer for vulnerable species whose habitat needs may be compromised by climate change. State programs vary a great deal in the level of protection they offer, but most focus on a single rate of flow to protect high-value fisheries. Organizations such as the [Instream Flow Council](#) provide important outreach and support for state agency and other officials seeking to restore natural flow regimes in western rivers. Voluntary or nongovernmental groups have begun buying, leasing, and otherwise securing instream flow water rights.

Policy options:

- Determine most effective “best practices” to replicate among states
- Broaden statutory purposes for which instream flows may be claimed
- Expand the list of parties who may hold instream flow rights
- Strengthen state and federal funding mechanisms to purchase senior water rights to protect instream flows

Promote local watershed efforts: Local watershed restoration efforts have emerged throughout our region in recent years, frequently in response to water quality impairment. The Western Governors’ Association’s 2004 report, [Water Needs and Strategies for a Sustainable Future](#) includes recommendations favoring greater integration of watershed organizations in statewide water management.

Policy options:

- Statutory authority for formation of local watershed districts to integrate efforts into statewide water and land management strategies²
- Improved funding and in-kind resources to support watershed initiatives

Improve ground water management strategies: State management of ground water lags far behind the administration of surface water rights, yet much of the population growth in this region depends on unsustainable ground water supplies. States must improve their ground water management policies and seek opportunities to manage ground water and surface water conjunctively. Trout Unlimited’s 2007 report, [Gone to the Well Once Too Often](#), provides an excellent overview of the relationship between ground water and rivers in the arid West, with suggestions for integrated management.

Policy options:

- Statutory incentives to recharge groundwater basins with treated effluent
- Statutory requirements for conjunctive use of surface and ground water

² For an example of specific recommendations to create new watershed-level entities in several Arizona river basins, see Sonoran Institute, *Sustainable Water Management: Guidelines for Meeting the Needs of People and Nature in the Arid West* 43-47 (2007).

- Monitoring and appropriate regulation of household wells and private septic systems, with incentives for community water supply and treatment systems for multiple-unit developments
- Expanded water mitigation banks and other creative use of underground storage capacity

Slowly, we are seeing a change in westerners' views toward water. A conservation ethic is emerging, and local leaders increasingly recognize the need to guide their communities toward a more sustainable future. Forward-looking water policies have long been advocated by progressives who trace their ideological lineage to John Wesley Powell and Gilbert White, but these proposals were stymied by the inherent conservatism of western water management.

The twin challenges of population growth and climate change force us to think sooner, rather than later, about the consequences of our choices. Today's public concern and willingness to act may offer an unprecedented opportunity to take the necessary steps to address our growing thirst while protecting the landscape and living rivers that sustain us. Western Progress is committed to pursuing policy changes to achieve this vision.

Sorting through the many opportunities for policy change, Western Progress has chosen to prioritize action items that: (1) reflect our assessment of the most urgent issues requiring attention in the near term; (2) match our special areas of expertise; (3) offer the best opportunities for favorable outcomes, both in terms of public awareness (receptivity to change) and actual policy reform (e.g. new legislation or management policies); and (4) build upon on our network of progressive contacts in the region to leverage our work beyond our immediate products.

2008 ACTION AGENDA FOR WESTERN PROGRESS

In the coming year, Western Progress will pursue several policy projects and participate in a number of related communications, networking and outreach initiatives aimed at achieving sustainable water policies for the Rocky Mountain West.

Instream flow protection policy report and legislative action: In the summer of 2008, Western Progress will release a comprehensive review and analysis of Rocky Mountain states' instream flow protection programs. Prepared by water expert Lawrence MacDonnell, and drawing on the expertise of a water policy review team convened in Boulder, Colo. in June, 2008, the report will include specific recommendations for legislative and administrative reforms in each state to strengthen instream flow protection, as well as an overview of "best practices" applicable to all state programs.

"Headwaters Summit" on climate change and water resources in Northern Rockies: Working in close partnership with co-organizers National Wildlife Federation and Clark Fork Coalition, in September, 2008 Western Progress will convene leaders of river advocacy and water user groups, including non-profit, public, and private interests; public

officials interested in pursuing policy changes related to climate change and water; and funders looking to explore innovative water resource management in response to climate change. This workshop will focus on opportunities for public education and legislative action to respond to the impacts of climate change on the water resources in the headwaters states of Montana, Wyoming and Idaho. Outcomes will include an action plan identifying priority issues and strategies to address them in upcoming legislative sessions, shared lessons for public education and policy messaging and specific plans for follow-up networking.

Water and land use legislation and local ordinances: Western Progress provided substantive comments on Colorado's H.B. 1141, resulting in an improved bill that requires local governments to determine whether development projects have secured adequate water for their projected needs, taking into account variable hydrologic conditions and potential conservation and demand-side management. Western Progress staff will continue to promote such integrated land use and water planning in the coming year, starting with a presentation to attorneys and policy makers attending the annual [Natural Resources Law Center](#) conference in June, 2008, and continuing through consultation with legislators and staff preparing for the upcoming 2009 legislative sessions.

Montana Legislature's Water Policy Interim Committee: At the conclusion of the 2007 session, the Montana Legislature established a [Water Policy Interim Committee](#), charged with researching legislative options to address surface water-ground water interaction, exempt wells, water quality and water quantity and other water-related issues. Western Progress will participate in the public review of the Committee's report and will work directly with legislators to suggest specific statutory language to bring the best thinking to these important topics in the 2009 legislative session, with the focus of our attention on the need to link land use and water decisions.

Urban Water Efficiency and Re-Use Policies in Arizona: Western Progress is working with a number of private sector developers and wastewater providers, public sector entities, and other water providers to convene a series of meetings designed to promote better water efficiency, especially better re-use policies in Arizona. A goal of the discussions will be to identify regulatory and statutory changes that can lead to maximizing re-use and water conservation, particularly in new subdivisions. Such innovations can be shared as best practices with neighboring states particularly in the Southwest where growth rates are the greatest.

Carpe Diem Project on Climate Change and Water in the West: Western Progress is part of the planning team for [Carpe Diem](#), a year-long cooperative initiative between advocacy groups and grantmakers to create a strategic framework necessary for the progressive community to address the effects of climate change on western river basins and water resources. A convening in Seattle in November, 2007 will be followed by a gathering in New Mexico in May, 2008. Between meetings, Western Progress staff members have assisted in developing policy option papers and designing a media audit to assess the sources of public information on climate change and water resources.

Sustainable Water Communications, Networking, and Outreach: Western Progress regularly publishes blogs, issue briefs, op-ed columns and in-depth articles on sustainable water policies. Thus far, our advocacy and analysis pieces related to water policy have appeared in [Headwaters News](#), [Science Progress](#), the Water Report, [NewWest.net](#), Denver Post Politics West, WaterWired and [WaterWorld](#). Western Progress staff members are regularly invited to provide public talks and to participate in strategy sessions concerning western water law and policy. We will continue to provide both long-term perspective and rapid-response to serve policy makers, media and advocacy partners throughout the region.

FOR MORE INFORMATION

For more information about the Western Progress sustainable water policy project, contact Sarah Bates, (406) 829-6608 or sbates@westernprogress.org