AMPLE WATER POTENTIAL, BUT A LEADERSHIP DROUGHT

Toward a 21st Century Regional Water Policy for Central Puget Sound

Discovery Institute Report
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INTRODUCTION

Washington Governor Christine Gregoire's statewide emergency drought declaration in March 2005 energized a growing public information campaign for water conservation in Central Puget Sound. A front-page Sunday article in The Seattle Times highlighted nine ways residents could conserve water (1), and other articles emphasized warnings from some of the region's top elected officials about looming drought and the importance of conservation (1.25, 1.5). All well and good, up to a point. But a 2001 Central Puget Sound Water Supply Forum report projects three-county population will grow from three million people in 2000 to nearly four million by 2020 and five million by 2050. These figures largely dovetail with more recent Puget Sound Regional Council estimates (1.75). The region's future water needs, for both man and fish, will require more than conservation, and more than the current fragmented approach to planning and decision making on in-stream and out-of-stream water supplies. In Central Puget Sound (King,

Pierce and Snohomish Counties), water is abundant. But utilizing it to meet the needs of man as well as nature requires real political leadership. The price will be substantial, but failure to start soon on developing a 21st century regional water infrastructure plan for Central Puget Sound means the tab will be even costlier in the end.

The climate for developing future water supply strategies in our state's most populous region would be improved by using better methods of assessing drought and issuing drought warnings, with special attention to the distinctions between drier Eastern Washington and wetter Western Washington (2). Thanks to steady April, May and June rains following a dry, warm winter, the declared drought emergency this year never materialized in Central Puget Sound. Into summer, the State Department of Ecology clung to the drought declaration statewide—though in Western Washington there was a host of indicators to the contrary. Seattle's reservoirs had filled to the brim in May (3). The state climatologist essentially disavowed there really was a drought in Western Washington (3.5). A major suburban water utility said they were experiencing no drought (4) and even Seattle began backing away from the "D" word (5). By the third week of May, the National Oceanic and Atmospheric Administration (NOAA) seasonal drought outlook forecast no drought for Western Washington this year, through the crucial month of August (6). July rainfall as measured by the National Weather Service at Seattle-Tacoma International Airport was above the monthly norm, and through July, yearly rainfall at Sea-Tac was within less than an inch of year-to-date norms based on a 30-year average (6.5).

Nature has provided more than adequate water to meet the region's future economic and environmental needs. The issues are leadership and money, according to Bob Pancoast, Executive Director of the East King County Regional Water Association. "'The sky is falling' scenarios don't hold, because of existing water rights, Seattle's supply, the potential for water reclamation, plus the rain, and Puget Sound," says Pancoast. "The problem is ultimately solvable. It's a matter of money."

Central Puget Sound reaps undeniable benefits from conservation, both as a near-term response to temporarily tightened water supply, and as a sensible daily practice under any circumstances. For many, if not most Puget Sounders, home conservation—in the bathroom, in the kitchen, and outdoors—has become ingrained. Increasingly, businesses large and small in the region are practicing conservation as well.

But while conservation remains important, it will surely not be enough, given expected regional population growth in coming decades. According to the Central Puget Sound Water Supply Forum, combined population in King, Pierce and Snohomish counties will grow from three million in 2000 to 3.9 million in 2020, and 4.9 million in 2050 (7).

Central Puget Sound is faced with a range of future water supply options, and a still-pressing need for an objective way to single out the projects with the highest benefit and lowest costs to ratepayers, public health and the environment. Lead times to develop water supply resources are long— 20 years or more—costs substantial, and political and regulatory obstacles palpable. The parallels to our region's troubled transportation planning process are striking.

A report issued by the Central Puget Sound Water Suppliers' Forum (2001 Central Puget Sound Regional Water Supply Outlook) asserted the need to start sooner, rather than later, on long-term planning to meet future regional water supply needs. The Forum is a consortium of the three counties, plus the cities of Seattle, Everett and Tacoma, and eight suburban water utilities and water utility associations and committees.

In its report, the Forum stresses that while its purpose is to increase coordination in regional water supply planning, "it is not a new regional governing body for public water supply" (8). Yet the Forum stakeholders also make clear that that such a body is needed.

The report states: "The Central Puget Sound area faces significant challenges in meeting the water needs for people and fish habitat with available resources … Demands on this natural resource have been increasing and are likely to continue to do so in the future, although they will increase more slowly due to conservation." The report goes on to explain that the region "does not currently have a structure or process for making collective regional water resource decisions," and that "such a process is needed now" (9).

In December of 2001, Jim Waldo, the Water Advisor to then-Governor Gary Locke, initiated work with dozens of stakeholders from all key sectors, including Forum member agencies, on a follow-up effort known as the Central Puget Sound Regional Water Initiative (CPSI). Delivered in April 2003, the CPSI report stemmed from the state Legislature's 1997 approval of the Watershed Planning Act, or HB 2514. The CPSI report stressed the need for a regional decision-making process and detailed how it should be structured. Though the effort subsequently stalled due to lack of political support and funding, the message might well be

viewed as more pressing than ever, with major population growth looming and the region struggling to resolve conflicts between in-stream and out-of-stream water uses.

"The Central Puget Sound region … has unique challenges to water resource management," states the CPSI report. "Decisions … involve both state and local government but are not coordinated. Other challenges … include population growth, economic development, fish recovery and potentially climate change."

The report proposed a three-part program. One component was the development of scientific and analytical tools to responsibly inventory in-stream water resource needs for fish and related habitat on a watershed-by-watershed basis. The CPSI report noted pointedly what some scientists and water utility managers freely acknowledge: "It is clear that lack of knowledge [regarding in-stream needs of fish] is a significant impediment to successful water resource management." The report also called for "an 'out-of-stream component' developed for the entire region including a watershed-by-watershed analysis," that would "include a water budget and identify current and future needs for out-of-stream purposes." The third component was integration of the in-stream and out-of-stream needs into a management program used to guide water, land use and planning decisions.

Under the proposed CPSI framework, Phase I scoping—plus Phase II data collection, analysis, policy recommendations and identification of areas of agreement and conflict—was to be done by June 2005. The CPSI report urged the Governor to pursue tribal participation on a government-to-government basis, and proposed that a final, Phase III decision-making phase begin by June 2006. Obviously, that has not happened. (In contrast, a similar effort is unfolding now—with state funding—along the main stem of the Columbia River, under the auspices of the Columbia River Partnership, formerly the Columbia River Initiative). Central Puget Sound must rise to the challenge outlined by CPSI. The longer we wait, the greater that unresolved conflicts will grow between in-stream and out-of-stream water uses, and the more it will cost to make and implement a holistic modern-day regional water policy.

We have abundant water available to us from a range of resources, including possibilities such as the Mirror Lake Oasis Aquifer in Federal Way and Lake Tapps. But political leadership is essential to take advantage of them.

This paper centers on three main areas: future water supply options, the role of salmon recovery efforts, and regional planning and decision making

FUTURE WATER SUPPLY OPTIONS

Consideration of future supply options must include a serious look at underground water storage projects of potentially great regional significance, such as the Mirror Lake Oasis Aquifer in Federal Way, which would be recharged in wet months to store large volumes of water for use in drier months. New infrastructure is also important, such as the proposed Lake Tapps project of the Cascade Water Alliance, and Tacoma's unfolding Second Supply project, involving increased aboveground storage and a new pipeline. In addition, less conventional sources can boost the supply of potable water for people, and water for fish; these include reclaimed wastewater for non-potable use. An important long-term option is desalination of saltwater.

SALMON NEEDN'T FORESTALL GROWTH

Environmental concerns are legitimate, but must not be allowed to prevent increased future regional water supply for residential, commercial and industrial use. Recovery of threatened chinook salmon in Central Puget Sound is a serious and ongoing concern. But balancing the claims of man and nature on Central Puget Sound's water is made more difficult by inconclusive science regarding how much water salmon really need, and—in some venues at least, a lack of emphasis on additional factors affecting salmon survival. According to James J. Anderson, professor in the University of Washington's School of Aquatic and Fisheries Sciences, these factors include types of migration strategies, the predator "gauntlet model," and ocean temperatures. We will further discuss Anderson's perspectives later on.

One very important contribution to the state of current knowledge is the $1.2 billion, 2006–2015 preliminary plan for salmon recovery in the 14 Puget Sound watersheds, released in early July by the multi-stakeholder group, Shared Strategy for Puget Sound. The Shared Strategy plan delineates additional factors affecting salmon, provides recent and current examples of salmon recovery in Puget Sound watersheds, and acknowledges the need for more research on in-stream flows. Importantly, the Shared Strategy report also posits that both salmon recovery and expected population growth can be accommodated, given sufficient public involvement and political leadership.

REGIONAL PLANNING AND DECISION-MAKING ARE CRUCIAL

A comprehensive, "super-agency" regional water supply planning process for Central Puget Sound deserves serious discussion. The challenges of meeting—in an efficient, cost-effective and environmentally sensitive manner—the water needs of five million people by 2050, and perhaps more people in subsequent decades, compel this discussion.

THE UTILITY PERSPECTIVE

While the viewpoints of Native American tribes, environmental groups and political leaders are undoubtedly important, it is also essential that the perspective of the water utility manager receives equal emphasis, particularly after the statewide drought declaration refocused attention on water supply issues.

Don Perry is general manager of the Lakehaven Utility District, which serves a population of about 100,000 in and around south suburban Federal Way. He says his jurisdiction has not experienced drought this year despite the Governor's pronouncement. "We haven't hit a threshold for this district for a drought. There's substantial groundwater storage. Our definition of drought is 'not enough water to serve our customers.' Some call it lack of planning." Melting snow is not the only way water becomes available to suppliers and users, stresses Perry. "If precipitation is not going to come down as snow in the mountains, the experts say it's still going to come down as rain." If Cascade snow pack is lower in the future, it will be increasingly important to capture, store and use rainwater, Perry says.

John Kirner, the Superintendent of Water for Tacoma Public Utilities, says, "We have a substantially increased population (in the three-county region) versus 1970, and the Puget Sound Regional Council forecasts a significant increase beyond today's population. That means more economic development. The homes, roads, streets, malls, parking lots, schools and work places to support population growth all put stress on the water resource. Add to that more emphasis than ever on leaving water in streams for salmon, and you're faced with the choice of people using less water, or making new water supplies and water storage facilities available." Kirner adds that in the face of further growth and environmental pressures, conservation and increased storage and supply need not be, and must not be, mutually exclusive.

But Central Puget Sound has so far "failed miserably" to set up an appropriate regional decision-making process involving all stakeholders to plan for the future water needs of fish and humans, according to Kirner. A state-sanctioned framework for regional water planning exists under the state's 1997 Watershed Planning Act (HB 2514). That should be the basis for a new and energetic effort in the region, Kirner asserts.

Because a regional process has not materialized, some utilities have understandably felt compelled to press forward with projects—each benefiting a host of water utility districts. Prime examples include Tacoma's Green River Second Supply Project (nearing completion) and the Cascade Water Alliance's Lake Tapps project (which was awaiting final Department of Ecology approvals as this paper was being completed). In many respects, the situation mirrors Central Puget Sound's transportation planning conundrum. A clear regional master plan for the future is lacking, and consensus remains elusive on balancing economic and environmental concerns.

MAIN AREAS OF DISCUSSION

I. FUTURE SUPPLY OPTIONS

Future supply options must include a serious look at underground water storage projects of potentially great regional significance, such as the Lakehaven Utility District's Mirror Lake Oasis Aquifer in Federal Way. It would be recharged in wet months to store large volumes of water for use in drier months. We will also discuss the proposed Lake Tapps project of the Cascade Water Alliance, Tacoma's Green River Second Supply project (involving increased aboveground storage and a new pipeline), and several others identified in the Forum's 2001 report.

Please note that what follows immediately below is only a partial list of potential projects. In the Appendix, "Further Questions for Investigation," I propose "second-phase" areas of inquiry for Discovery Institute on future regional water supply strategies, including compilation of a more detailed status update on:

- All 17 "conventional" water supply projects for Central Puget Sound that were identified by the Forum in 2001 for further consideration.

- "Generic" options identified by the Forum as important, but which are covered either briefly or not at all in this paper. These would include such strategies as desalination, pipeline inter-ties between different water utilities, and temporary loaning.
- Less conventional supply sources, such as use of reclaimed wastewater for non-potable purposes, and managing development-related storm water run-off to boost infiltration to groundwater supplies.

A SAMPLING OF CENTRAL PUGET SOUND WATER PROJECTS

The Snohomish River Regional Water Authority's Weyerhauser Water Right. After a lengthy regulatory and legal process, the Snohomish River Regional Water Alliance (SRRWA)—composed of the City of Everett, the Northshore Utility District and the Woodinville Water District—in April 2003 won final clearance to use its water right purchased from Weyerhauser in 1996. The right had been granted to Weyerhauser for industrial use in connection with their Everett pulp mill, which closed in the early '90s. The right is for 36 million gallons per day (mgd) from the Snohomish River, the largest water right transfer ever in the state. The project is expected to come online between 2020 and 2035, and will include treatment and a new pipeline. Northshore currently gets all its water from Seattle Public Utilities. *Status: permitting successfully completed; implementation envisioned between 2020 and 2035.*

Tacoma's (Green River) Second Supply Pipeline. Additional water allowed to be stored at a reservoir of Howard Hanson Dam on the Green River will be pumped west to Tacoma, and the growing South King County municipalities of Covington, Black Diamond and Federal Way, via the Second Supply Pipeline. Minimum in-stream flows are ensured by a Habitat Conservation Plan developed under the Endangered Species Act, and flows are also boosted by additional releases of water into the river by the Army Corps of Engineers, which operates the dam. Still, the utility will be able to capture up to an additional 65 mgd except for a one-month window in the summer. That amount is enough to supply the city of Tacoma during peak use periods. So, with its first pipeline and city wells already supplying the city, Tacoma can afford to make Second Supply water available to other towns in need. The Second Supply project represents a significant regional resource. Its significance will grow if and when a north pipeline extension is

built, as is considered likely, to bring Lake Tapps water north to the Cascade Water Alliance's eight-member utility district in King County. *Status of Second Supply project: permitting successfully completed, construction nearly completed, activation expected in summer 2005.*

The Cascade Water Alliance's Lake Tapps Project, including a north extension from some point along the Tacoma "Second Supply" pipeline. The Alliance (consisting of Bellevue, Issaquah, Kirkland, Redmond, Tukwila, and the water districts of Sammamish, Covington and Skyway) was in August awaiting final Department of Ecology approval of its deal to buy Lake Tapps for $37 million from Puget Sound Energy. The reservoir in east Pierce County was part of a PSE White River hydroelectric project that was shut down in 2004. The Alliance signed a 50-year agreement in 2004 that gradually weans it off Seattle's supply. Bellevue, which drove the formation of the Alliance, has long wanted a primary water source independent of Seattle, and had lost an early '80s bid to win federal approval for a dam on the Middle Fork of the Snoqualmie River. The Lake Tapps project would eventually supply up to 65 mgd of drinking water to its members' customers, meeting their needs from 2025 into the 2050s. The project is estimated to cost $450 million, some 80 percent to be covered by issuance of tax-exempt water utility bonds. Rates for water users in the Alliance's member municipalities and water district are projected to rise anywhere from five to 13 percent per year when the project commences, and then level off after six to 10 years, according to Alliance Executive Director Mike Gagliardo. Serving post-2025 water demand in the fast-growing Eastside will cost utilities and ratepayers more, no matter who the supplier is, Gagliardo stresses.

A treatment system is one crucial component of the Lake Tapps project, as the lake is surrounded by expensive homes with septic fields. The Alliance had hoped to utilize the City of Seattle's Cedar River transmission pipeline running north toward the Alliance's service area, according to Gagliardo. Instead, however, the Alliance is likely to have to build its own pipeline to get the water north to its customer base. Expressing concerns about post-treatment water quality problems with Lake Tapps water, Seattle is currently declining to make its pipeline available for the project.

Ecology originally issued a permit to the Alliance for the existing PSE Lake Tapps water right in 2003, subject to several environmental stipulations. Several tribes and nearby cities

challenged the authorization, however, and the state Pollution Control Hearing Board ordered Ecology to revisit the decision. *Status: final approval pending.*

The Lakehaven Utility District's Mirror Lake Aquifer in Federal Way is a potentially large source of future underground regional water storage and supply. It could eventually yield up to 81 mgd during the four-month dry season, based on what Lakehaven officials call a "conservative" estimate of 27 wells each producing three million gallons per day. In the eight rainy months, water would be treated and pumped into the aquifer by the ASR (aquifer storage and recovery) wells, which would withdraw the water for treatment and use in summer months. During the drier period, the aquifer would be recharged by Tacoma's Second Supply project and other municipal sources, according to Lakehaven General Manager Perry and the district's Water and Special Projects Manager John Bowman. Perry says an important consideration is that there are no competing water rights holders who will suffer harm from the project. Bowman says the project could be a regional source of storage and supply. Other water utility professionals in Central Puget Sound, especially King and Pierce counties, agree, and hold the Mirror Lake Aquifer in high regard. Perry says Ecology has been working cooperatively with Lakehaven on the permitting process. *Status: further permits to be issued this year.*

NOTE: Please see "Appendix: Further Questions for Investigation" for proposed second-phase treatment of additional regional water supply options, as well as other topics proposed for further exploration.

II. SALMON NEEDN'T FORESTALL GROWTH

Environmental concerns are legitimate, but must not be allowed to prevent increased future regional water supply for residential, commercial and industrial use.

It is heresy to say so in some quarters, but no one really knows how much water salmon need to thrive. In its 2001 in-depth report on regional water supply planning, the Central Puget Sound Regional Water Suppliers' Forum stated that "the in-stream flows needed to support viable fish populations are not currently known for many of the region's creeks and rivers" and

that "lack of this information is an impediment to comprehensive water resource planning." The report goes on to state, "Additional work will be required to develop a better understanding of the relationship between flows and fisheries life cycles. Eventually, this information will enable municipal water supply decision making that accounts for water quantity needs of fish."
The Forum report says lack of such knowledge—along with lack of a guiding state policy on allocating water among people, fish and the environment—is a major institutional constraint on planning to meet the region's future water needs.

The survival and health of northwest salmon is not a simple matter of boosting water levels in streams and rivers, according to James J. Anderson. He is a professor in the University of Washington's School of Aquatic and Fisheries Sciences, and Director of Columbia Basin Research, a division of the school which focuses on salmon issues in the river's basin. Anderson says his observations have bearing on the man-versus-fish underpinnings of the water resource management debate in Western Washington and Central Puget Sound. He identifies several key factors deserving greater attention:

a) **The Gauntlet Model.** Flow levels and time spent in-stream were thought to be the primary factors affecting Northwest salmon on their journey toward the ocean—where they feed, grow larger and healthier and then return upstream to fertilize eggs or spawn. But we must also factor in "the gauntlet model," says Anderson. Salmonids pass through a gauntlet of predators on their downstream journey to the ocean. In many instances, their survival depends not only on how long the whole migration takes (or simply the level of in-stream water flows), but also how many and what type of predators are present, and the length of predator gauntlet, as opposed to the whole journey.

b**) Distribution of Migration Strategies.** Anderson says the size and speed of the migrating salmon are another key survival factor, and that some salmon are much less affected by in-stream flow levels during their crucial journey to the ocean. These are fish that adopt a "stream type" or "reservoir type" migration strategy. They go up into tributaries for a year or more after birth, or bide some time in reservoirs, growing bigger and faster and more capable of making it to the ocean than smaller, younger and slower fish that adopt the "ocean type" approach of heading directly toward salt water. Higher in-stream flow levels, says Anderson, may benefit the younger and smaller "ocean type" salmonid voyagers, and are necessary in smaller streams, as opposed to larger streams, and rivers.

But high flow levels are not helpful to the older, bigger and faster "stream type" fish traveling toward the ocean in some streams and rivers, according to Anderson.

c) **Ocean Temperatures.** Anderson says that in 1977, there was a "profound shift" in the Pacific Ocean, with water temperatures off the U.S.'s West Coast becoming warmer, and far more regularly exceeding the preferred limit of 12 degrees. Temperatures have fluctuated since then. When present, warmer temperatures have several effects, which continue to influence salmon survival and recovery: cold-water shrimp and other salmon food decline in abundance, currents change, and predators such as jack mackerel become more numerous. "Knowing the importance of ocean temperatures," says Anderson, "it is far harder to say the hydro system" of Northwest dams, or in-stream flows, are crucial factors.

Matt Longenbaugh, Branch Chief of the National Marine Fisheries Services (NMFS) Northwest Region Habitat Conservation Division, acknowledges that in-stream flow level is not always crucial to salmon survival and recovery, noting that in-stream barriers, storm water control, migration strategies, and ocean temperatures are among other influential factors. "On any one basin, flows may or may not be key" in a given year, he says.

Longenbaugh says there are 21 types of salmon on the Pacific Coast that are officially classified as "listed" under the Endangered Species Act. This means they receive one of the top two risk classifications: either "endangered," which means high risk of extinction, or "threatened," which means a slightly less than high risk of extinction. Within Central Puget Sound, says Longenbaugh, there is one type of salmon listed: chinook. It is classified as threatened, and is the primary focus of current Puget Sound salmon recovery efforts.

Overall, data on gauntlet conditions, migration strategies and ocean temperatures must be more thoroughly gathered and processed into decision-making models affecting water resource utilization, says Anderson. "If we want to manage these resources effectively, agencies have to go beyond the capabilities they currently have," says Anderson, and use such data to predict future survival of various salmonid populations.

None of this should be taken to indicate a lack of concern for salmon. Indeed, there is clearly no shortage of environmental stewardship on behalf of salmon in Central Puget Sound. For instance, under the Endangered Species Act, and working with a wide variety of stakeholders, Tacoma Public Utilities and NMFS crafted a comprehensive Habitat Conservation

Plan as part of the Second Supply water project. It will protect 32 different types of animals and fish—including threatened chinook—in the Upper Green River Watershed. In addition, the Shared Strategy for Puget Sound salmon recovery plan covering all 14 Puget Sound watersheds was submitted to NMFS in early July, with review and final approval of the recommended guidelines expected from the agency by December or January.

Further, groups such as the Green River Flow Committee and a similar committee involving Cedar River stakeholders, meet regularly to resolve competing "real-time" concerns involving municipal water supplies and in-stream flow levels for salmon. But while such efforts are vitally important, says Tacoma's Kirner, they are no substitute for a full-scale regional planning process under the state's Watershed Planning Act (HB 2514), to set the future course in securing water for man and nature in Central Puget Sound. Kirner contends that water's importance to utilities and economic development must be placed on equal footing with its importance to the environment in an HB 2514 process for Central Puget Sound.

The twain could, and must, meet. The Shared Strategy salmon recovery plan delineates additional factors affecting salmon, provides recent and current examples of salmon recovery in Puget Sound watersheds, and acknowledges the need for more research on in-stream flows. It also holds that, given sufficient public involvement and political leadership, both salmon recovery and expected population growth can be accommodated.

Shared Strategy highlights the need for salmon habitat improvements, including estuaries, floodplains, riparian and nearshore areas, and with respect to water quantity and quality, and harvest and hatchery management. Shared Strategy estimates a cost of $1.2 billion to implement recommended salmon recovery measures in the 14 watersheds from 2006 to 2015.

THE TRIBAL PERSPECTIVE: James R. Anderson (not to be confused with UW's James J. Anderson, above) is Executive Advisor to the Northwest Indian Fishing Commission. He says that if there is to be any regional approach to water supply planning and salmon recovery in Central Puget Sound, the Shared Strategy plan and its watershed-by-watershed approach—with specific salmon recovery measures clearly identified and implemented—must be crucial components. Speaking from the tribal perspective, Anderson also stresses that any such process must acknowledge the tribes' senior water rights and their status as sovereign governments. "If the tribes are just going to be played off, they're not going to be there [at the table]," he says,

adding that any regional decision-making process on water supply planning and salmon recovery involving the handful of watersheds in Central Puget Sound will raise expectations for corollary efforts elsewhere in Puget Sound.

III. REGIONAL PLANNING AND DECISION-MAKING CRUCIAL

As we have noted above, the Central Puget Water Suppliers' Forum has strongly recommended a regional decision-making process; as did then-Governor Gary Locke's Water Advisor Jim Waldo in the Central Puget Sound Initiative (CPSI) report. Diana Gale is the former head of Seattle Public Utilities, and in that position, played a central role in overseeing the Forum's 2001 study. She is now a research scientist and adjunct professor at the University of Washington's Evans School of Public Affairs. Gale is a strong advocate of water conservation who also sees comprehensive regional water supply planning in Central Puget Sound as a vital objective. The "quick and efficient" response to supply shortages, she contends, is conservation; developing a strong conservation ethic among Central Puget Sound water utilities and customers has been crucial. But, she adds, "you have to keep your eye on the ball, and on the importance of developing alternatives." Instead of a "race to the finish line" among competing project sponsors, Gale says that a regional agency is needed to evaluate projects such as Lake Tapps, the Mirror Lake Oasis Aquifer, and others for cost and environmental impacts. According to Gale, this approach would result in decisions that are the most rational, that yield optimal public benefit, and that best facilitate the gradual phasing in of new water storage and supply capabilities for Central Puget Sound, as needed.

Gale stresses the importance of phasing. If multiple regional water supply projects are going to be pursued, she says, they need to be brought along one at a time so that no one utility gets caught with "stranded investments." Gale warns that this can occur if a utility develops a project but then encounters a regional "water surplus," which temporarily lowers the value of the water. "Stranded costs are a big issue for utilities which try to hold down their rates and bring them up only slowly," Gale adds.

The case for comprehensive regional water planning is also underscored by a more immediate challenge. Central Puget Sound must further develop an infrastructure of pipelines

and "inter-ties" between pipelines throughout the region so utilities can more easily buy, sell and deliver water to each other, especially when some are low on supplies and others are flush. Utility managers again and again have identified such a network as very important to handling future supply shortages. It is growing gradually, but without any real regional consensus on what the final map should look like. Don Ellis is the Chairman of the Snohomish River Regional Water Authority, and has been a Northshore Utility District Commissioner for almost 40 years. He says, "The ideal would be a multi-county regional system with the ability to shunt water from watershed to watershed. If you had major pipelines and cooperation between the agencies, you could forestall some of the expensive development."

The CPSI model meets the call for a regional water decision-making body, highlighted by the Forum's 2001 report, and could be modeled after a parallel effort now underway in Eastern Washington; the Columbia Water Partnership. Formerly known as the Columbia River Initiative, the Partnership was launched in accordance with HB 2514. Members are now attempting, within the context of the federal hydropower system in Eastern Washington, to set the framework, gather public input and eventually win legislative backing for a comprehensive plan to secure more water for in-stream and out-of-stream uses along the main stem of the Columbia River.

Joe Stohr, a special assistant to State Department of Ecology Director Jay Manning, says the Columbia initiative was launched with a capital appropriation of $6 million for feasibility studies of water storage options. Another $10 million is authorized to contribute toward costs of water storage, water acquisition, and agreements with Canada, Native American tribes and the federal government. After public workshops this fall, says Stohr, it is possible the state Legislature could take action as early as the winter 2006 session.

Legislative backing was essential to winning funding and starting the effort along the Columbia's main stem. The same would hold true for a corollary effort in Central Puget Sound. But before state legislators from the three-county region can be persuaded to prioritize funding for something like the discontinued Central Puget Sound Initiative, area governments and water utilities would have to strongly demonstrate shared commitment to the concept, along with the Governor and Ecology Director Manning.

APPENDIX: Further Questions for Investigation.

A more detailed status update is needed on those remaining conventional water supply projects among the 17 identified by the Central Puget Sound Water Suppliers' Forum in their report, and not covered here. Which ones are most likely to proceed at this point, and what important lessons, if any, can be learned from the experiences of various project sponsors in the last four years?

With reference to existing real-life models in major metropolitan regions around the world, and with an eye toward potential implementation in Central Puget Sound, discussion and analysis of the "generic" water supply options identified as especially important in the 2001 Forum report is necessary. These would include desalination, pipeline inter-ties between different water utilities, and temporary loaning of water.

Discuss global examples, and the potential benefits and problems of "less conventional" supply strategies, such as use of reclaimed wastewater for non-potable purposes, and managing development-related storm water run-off to boost infiltration to groundwater supplies.

Where and how could new aboveground reservoirs be built to help serve regional water needs without constructing new dams? Are there such models to consider in Western U.S. states, and are they potentially applicable in Western Washington, to help meet Central Puget Sound's future water supply needs?

How has the state's regulatory framework helped and hindered efforts by municipalities, water districts and business to develop or expand water supply options? Provide examples in each case.

What legal decisions and regulatory actions in Washington state have shaped the current environment on water resource allocation, and how?

What important steps has the state Legislature taken to respond to the water needs of municipalities, utilities and economic interests in recent years? What more could the Legislature do?

Identify any other U.S. metropolitan regions pursuing a comprehensive water supply planning framework essentially similar to that suggested in the April 2003 Central Puget Sound Initiative report. In any such cases, what progress has occurred to date?

Many water utility professionals in Central Puget Sound say they believe global warming is a factor, its effects including slightly warmer winter temperatures in the Cascades and a decreased snow pack. Their response is fairly phlegmatic, stressing the need to draw water from sources other than snow pack, such as rain. Nonetheless, how might the concerns of environmental groups regarding global warming affect dialogue and decision making on regional water supply for Central Puget Sound?

What next steps are most crucial for future water supply planning in Central Puget Sound?

FOOTNOTES

1. The Seattle Times, "Some Gizmos Are Right as Rain for Saving Water," April 17, 2005.

1.25 The Seattle Times, "Mayors Join in Call to Conserve Water," March 17, 2005.

1.5 The Seattle Post-Intelligencer, "Mayors' Water Plea: Don't Wait to Conserve" March 17, 2005.

1.75 "2001 Central Puget Sound Regional Water Supply Outlook," Central Puget Sound Regional Water Suppliers' Forum, p. 4-8, Table 4-2. December 2003 Puget Sound Regional Council population projections for three-county region are 3.81 million by 2020; 4.19 million by 2030; and according to a preliminary August 2005 forecast, 4.6 million by 2040.

2. One metric that might be evaluated for use in Western Washington is Surface Water Supply Index (SWSI), which represents water supply conditions unique to each river basin. This and several other drought metrics are discussed in more detail in "What Is Drought? Drought Indices," Dr. Michael J. Hays, Climate Impacts Specialist, National Drought Mitigation Center.

3. June 7, 2005 talk by Dr. Philip Mote to the Partnership for Water Conservation, Seattle City Hall.

3.5 Ibid.

4. Interview with Lakehaven Utility District General Manager Donald Perry, May 19, 2005.

5. The Seattle Times, "Rain Dilutes Fears of Drought," May 27, 2005.

6. National Oceanic and Atmospheric Administration, "U.S. Seasonal Drought Outlook through August, 2005" (issued May 19, 2005).

6.5 The Seattle Times, chart titled "July 2005 Weather Wrap-up," accompanying article, "July Had Damp Beginning, But Summer's Finally Here," August 2, 2005.

7. Central Puget Sound Regional Water Supply Outlook, p. 4-8, Table 4-2.

8. Central Puget Sound Regional Water Supply Outlook, p. S-2

9. Ibid.

YOUR COMMENTS ARE WELCOME: Please respond to Matt Rosenberg via email at oudist@comcast.net.