



**TREASURE VALLEY
WATER SUMMIT**

Treasure Valley's Water Future

**Summary of the Treasure Valley Water
Summit, January 14-15, 2002**

Compiled by:

Community Planning Association of Southwest Idaho
Idaho Department of Water Resources
Idaho Water Resources Research Institute
Envirolsues, Inc

May 15, 2002



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Executive Summary

Water is a defining element of the Treasure Valley. On January 14 and 15, 2002, more than 300 people participated in the Treasure Valley Water Summit, a community-wide discussion about Treasure Valley water issues. Topics focused on the current state of our water resources, the potential effects of population growth on water resources and strategies for planning a water future. Participants included citizens, elected officials, federal, state and local government scientists, planners and engineers, representatives of agriculture and industry, private developers and legal professionals. In April 2002, the Summit results were presented to valley decision-makers.

Summit speakers and participants identified the issues and recommendations outlined below. In addition to issue-specific recommendations, participants called for strategies that enhance collaboration in all areas of water planning. The next step will be to begin incorporating recommendations in urban planning and water management efforts.

Future Water Supply
<i>Goal:</i> Provide a sustainable supply of high quality water for domestic, commercial, municipal, industrial and irrigation users for the foreseeable future without causing unintended adverse impacts to the basin hydrology.
<i>Recommendations:</i> Use collaborative relationships established in past studies and current planning initiatives to evaluate options for meeting future water needs. Facilitate more efficient and less costly transfer of existing water rights.
Effects of Urbanization
<i>Goal:</i> Manage urbanization to minimize adverse hydrologic impacts to Treasure Valley water resources and uses.
<i>Recommendations:</i> Develop a better understanding of the impacts of urbanization on water resources. Develop policies and requirements for community septic systems and wells, drainage, and landscape watering to protect water resources.
Growth and The Boise River
<i>Goal:</i> Preserve and protect the Boise River and its environs as a multiple-use asset for our communities and future generations. Minimize risk of damage from flooding, with respect for private property rights.
<i>Recommendations:</i> Fund, develop and implement a collaborative multi-objective master plan for the Boise River corridor to address flooding, open space, recreation, habitat and land use in the river corridor. Develop mechanisms to preserve open space and critical sensitive areas in the flood plain to protect flood storage, habitat and wetlands. Improve access to support growing demand for recreation.
Ground and Surface Water Quality
<i>Goal:</i> Protect and improve ground and surface water quality to support domestic, commercial, municipal, industrial, recreation and fish and wildlife uses as required by law and to support present and future water uses.
<i>Recommendations:</i> Expand and improve data collection. Develop and implement local policies and requirements related to storm water management, septic tanks, infill development and protection of drinking water supplies to protect ground and surface water quality. Identify and coordinate funding for implementation. Improve well construction standards and ensure that wells no longer in use are properly abandoned.
Public Outreach and Education
<i>Goal:</i> Provide information in a variety of ways to ensure the public and stakeholders are informed about the importance, character and condition of Treasure Valley water resources and water issues.
<i>Recommendations:</i> Develop and implement a coordinated multi-agency public education and outreach plan to inform key audiences about water issues.

Introduction

Water is a defining element of the Treasure Valley. Adequate amounts of high quality water to meet the needs of irrigation, domestic, commercial, municipal and industrial users, recreation, and fish and wildlife, as well as flows managed to minimize flood risk, are key to our economy and quality of life. What is the current state of our water resources? How will population growth affect water and how will water influence growth?

More than 300 people participated in a community-wide discussion about Treasure Valley water issues on January 14 and 15, 2002 and about 80 people attended a follow-up discussion for decision makers. Participants in the Treasure Valley Water Summit included citizens, elected officials, federal, state and local government scientists, planners and engineers, representatives of agriculture and industry, private developers, and legal professionals. The Summit agenda is included in Appendix A.

The purpose of the Summit was to help participants chart a more informed course for decisions affecting our water future as the Treasure Valley moves into the 21st Century. The summit included:

- An overview of the character, use and condition of water resources;
- Reports on recent technical findings related to ground and surface water;
- Discussions of current and future water supply and management issues and the technical and policy implications of water management options; and
- Identification of priority issues and actions for protecting and enhancing the Boise River.

This report summarizes presentations and participant discussions related to Treasure Valley's water future.

Treasure Valley Growth

Between 1990 and 2000 the Boise metropolitan area, which includes most of Ada County, Caldwell, and Nampa, was the seventh fastest growing metropolitan area in the country. By 2020, population in Ada and Canyon Counties is expected to be around 650,000. The number of households is expected to increase by 52%, from 158,000 in 2000 to 241,000 in 2020. Population growth will inevitably impact water resources in the valley and water resources will influence growth. Recent growth tends to be at higher than comprehensive plan densities outside of impact areas, and equal or lower than comprehensive plan densities inside impact areas. Development outside impact areas means more wells withdrawing water from the shallow aquifer, more individual septic systems and possible changes to aquifer recharge. As development decisions are made, we need to understand how patterns of development will affect our water resources.

Water for domestic, commercial, municipal and industrial uses in the Treasure Valley comes largely from ground water, whether delivered by a public water supplier or withdrawn from a private well. The Idaho Department of Water Resources estimated that in 1998 we used 33.6 billion gallons (103,000 acre-feet¹) of water for domestic, commercial, municipal and industrial purposes. Water demand is expected to increase between 74 and 93 percent in the next 25 years. That means we need between 76,000 and 96,000 acre-feet of water to satisfy new water demand.

In Idaho, planning and management decisions that affect our water resources are the responsibility of federal, state and local government agencies; special purpose districts for flooding, irrigation, drainage,

¹ An acre-foot is the volume of water that covers one acre (43,560 square feet) one foot deep.

sewer and water; businesses; and individual citizens managing water on their own property. Successful planning for the future requires a collaborative effort among all these groups.

Surface and Ground Water Resources

Treasure Valley is located in the lower part of the Boise River basin, below Lucky Peak Dam. Average annual snow pack for the entire basin is about two million acre-feet of water per year. About one million acre-feet of annual runoff is stored in three reservoirs – Anderson Ranch, Arrowrock and Lucky Peak. The rest is consumptively used or flows out of the basin. The US Bureau of Reclamation, Water District 63, and the US Army Corps of Engineers, manage storage and natural flows for irrigation, flood control, power generation and winter in-stream flows in the Boise River. About 40,000 acre-feet of storage water is released in the summer to augment flows for endangered salmon. The timing and volume of flows varies widely from year to year. Generally, water managers decrease peak flood flows in the spring and increase flows in the summer for irrigation deliveries. Boise River water is distributed throughout the valley by more than 2000 miles of irrigation canals and laterals. Excess irrigation water infiltrates to ground water or returns to the Boise River via drains and natural waterways.

Much of the Treasure Valley is underlain by shallow aquifers (generally less than 250 feet deep), which supply water for rural, domestic, irrigation and some municipal wells. These aquifers are recharged largely by infiltration from flood-irrigated fields and canal seepage. Shallow aquifers are underlain by deeper regional aquifers. Deeper aquifers commonly supply water to irrigation, municipal and some domestic wells ranging in depth from about 300 to over 1,100 feet. In most areas this regional ground water system is separated from shallow aquifers by interbedded clay zones. A geothermal aquifer, which supplies heat for buildings and greenhouses, underlies the deeper cold water system in parts of the valley.

More than 15,000 wells draw about 200,000 acre-feet of water per year from Treasure Valley aquifers. Despite these withdrawals, ground water levels have remained relatively constant in most areas. Two areas – southeast Boise and an area south of Lake Lowell – have experienced substantial declines in deeper aquifers, especially during drought years. Recent decreased pumping in southeast Boise appears to have stabilized ground water levels in that area.

Key Issues and Recommendations

A number of water issues were discussed at the Treasure Valley Water Summit. This section summarizes goals and recommendations for each issue, offered by speakers and participants during the course of the Summit. A more detailed list of recommendations is included in Appendix B. Summaries of speaker presentations are included in Appendix C.

The need for coordination and collaboration was a theme that ran through many of the presentations and recommendations. Speakers and participants alike stressed the need for agency coordination, collaborative problem solving, and meaningful stakeholder involvement in urban and water planning.

Issue 1: Future Water Supply

Goal: Provide a sustainable supply of high quality water for domestic, commercial, municipal, industrial and irrigation users for the foreseeable future without causing unintended adverse impacts to the basin hydrology.

Background

An additional 75,000 to 95,000 acre-feet of water will be needed to supply water for Treasure Valley growth in the next 25 years. While there is enough water in the basin to meet these needs – about 1 million acre-feet leave the basin each year – the water is not always available at the time and location of need. Surface water supply is fully appropriated above Star, most storage water in reservoirs is appropriated for irrigation, and ground water supplies are fully utilized in the eastern part of the basin. Today most municipal water supplies come from the deep aquifer and most individual wells withdraw from the shallow aquifer. Future users will likely need to rely more on surface water.

In much of the basin, the ground water and surface water systems are closely interconnected. The Idaho Department of Water Resources is considering strategies for conjunctive administration of ground and surface water (water rights would be administered without regard to source). This could result in limits on ground water use or mitigation requirements when withdrawals adversely impact a senior surface water right.

Recent multi-agency collaborative studies of future water needs, ground water flow characteristics, water quality, and land use changes have provided valuable new information. These studies provide a sound technical basis for the next stage of water planning.

Recommendations

- Conduct a comprehensive hydrologic, institutional, economic and environmental evaluation of alternatives for meeting future water needs. Evaluate surface water storage (in-stream and off-stream), ground water storage (managed recharge and retrieval), transfer of existing storage and natural flow rights, conservation, recycling and reuse, opportunities to optimize reservoir operations and diversions from the Snake and Payette Rivers.
- Facilitate more efficient and less costly transfers of existing water rights, including broader use of market solutions.

Issue 2: Effects of Urbanization

Goal: Manage urbanization to minimize adverse hydrologic impacts to Treasure Valley water resources and uses.

Background

Most urban development in Treasure Valley is occurring on lands that were formerly irrigated agriculture. Over 100 years of irrigation has changed the Valley's hydrologic system. Ground water recharge from leaking canals and flood irrigation has raised water levels in the shallow aquifer from 10 to over 100 feet in some locations. Natural drainage ways that carried water for only a short time during rain storms and spring runoff have been deepened to provide conveyance for irrigation water and to drain excess ground water from adjacent lands. As these lands urbanize, possible effects include:

- Reduced recharge to shallow aquifers if less water is applied for irrigating landscaped areas;
- Reduced aquifer recharge from canal leakage if lawns are watered with ground water rather than surface water;
- Reduced aquifer recharge due to increasing amount of impervious surfaces;
- Increased flood risks and degraded surface water quality due to increasing impervious surfaces;

- Encroachment on irrigation canals and rights of way, complicating irrigation system operation and maintenance;
- Increased risk of ground water contamination resulting from the proliferation of individual wells and septic systems; and
- New challenges for water appropriation, management and delivery as irrigated lands become urbanized.

Recommendations

- Collect and analyze data to accurately characterize the hydrologic impacts of urbanization.
- Require careful accounting of water use before and after development.
- Use irrigation and gray water for landscape watering to conserve high quality ground water supplies for drinking water.
- Require community wells and community septic systems in higher density developments outside municipal service areas.
- Adopt drainage policies that promote ground water infiltration and improve surface water quality.
- Conduct public education to increase individual stewardship and improve understanding of irrigation system needs.
- Encourage partnerships between communities and irrigation entities to solve challenges resulting from urbanization adjacent to irrigation conveyance systems.

Issue 3: Growth and The Boise River

Goal: Preserve and protect the Boise River and its environs as an important multiple-use asset for our communities and future generations. Minimize risk of damage from flooding, with respect for private property rights.

Background

The Boise River is an enormous asset for the Treasure Valley, supplying water for irrigation and other uses, providing recreation and development opportunities, aesthetic beauty and habitat for fish and wildlife. In 1965, the Boise River was the second most polluted river in Idaho. Twenty years later, the Boise River had become the most recreated river in Idaho. Each summer more than 300,000 people use the river between Barber Park and Eagle, and use is increasing each year. The river is also highly valued for development. As development along the river continues, natural values are impacted, and the risk of flood damage and cost of channel maintenance increases significantly.

The upstream reservoirs have provided a sense of safety resulting in increased development in the floodplain. However the existing storage system can only handle small to medium sized floods. The experiences of other communities show a pattern of development along the river, triggering protection and flood control projects, followed by more development in the river corridor. A typical response is to resort to vegetation management, riprap and channelization to protect property. However, experience elsewhere has shown that flood control projects often fail in a big flood. The impacts of a 100-year flood in the Treasure Valley could be economically devastating.

Recommendations

- Fund development of a multi-agency, multi-objective master plan for the Boise River corridor. Involve landowners, developers, and farmers in planning. The plan should:
 - address access, flooding, land use in the floodplain, open space, recreation, riparian habitat and gravel pit rehabilitation;
 - identify opportunities to reduce risk to citizens from flooding;
 - identify important resources associated with the River (habitat, flood storage areas, etc);
 - develop strategies for protecting important resources and enhancing resources that can be enhanced;
 - involve agencies, landowners, recreation interests and irrigators in developing a multiple use strategy for stream channel management; and
 - complement polices and recommendations in the Idaho Department of Water Resources comprehensive basin water plan.
- Adopt ordinances in individual jurisdictions to implement the plan.
- Use a variety of tools (e.g. conservation easements and setbacks) to preserve open space and critical sensitive areas in the flood plain to protect habitat, flood storage and wetlands. Develop economic incentives for landowners who protect and enhance high priority resources identified in the master plan.
- Improve existing and develop new access areas to support the growing demand for recreation opportunities, with an eye to protecting sensitive resources.

Issue 4: Ground and Surface Water Quality

Goal: Protect and improve ground and surface water quality to support domestic, commercial, municipal, industrial, recreation and fish and wildlife uses as required by law and to support present and future water uses.

Background

The Department of Environmental Quality has determined that sediment and bacteria are present in concentrations that impair beneficial uses in the Boise River and Indian, Blacks, Mason, Fivemile and Tenmile Creeks (bacteria is impairing recreation in all; sediment is impairing aquatic life in the Boise River and Indian Creek). The Department has also found that phosphorus from the Boise River watershed is contributing to impairment of the Snake River and Brownlee Reservoir. Cleanup plans that establish targets and proposed implementation strategies are underway or complete for most of these pollutants. In the Treasure Valley, agriculture and local governments will be responsible for accomplishing most of the pollutant reductions required to meet the targets.

Ground water in the Treasure Valley has been impacted by petroleum from leaking underground storage tanks, industrial solvents, inorganic contaminants from wastewater land application facilities, and nutrients, particularly nitrate, from non-point sources. The Department oversees responsible parties who are compelled to cleanup releases from underground storage tanks, industrial sites and wastewater treatment facilities.

Protecting our high quality water supply is extremely important. Currently about 95% of Treasure Valley drinking water comes from ground water. Large suppliers generally draw water from the deep aquifer and private domestic wells draw from the shallow aquifer. Careful management of potential pollution sources, including land use activities, can protect our water supply for the future. Similarly, proper well construction helps to prevent the introduction of pollutants to aquifers.

Recommendations

Surface Water

- Expand and improve surface water quality data collection. Use data to define attainable goals, better understand factors affecting water quality and evaluate progress.
- Provide coordinated funding, market-based incentives and better information on practices to improve surface water quality.
- Task executive agencies with improving coordination of the implementation of laws and regulations related to surface water quality.
- Develop and implement specific plans for local communities and rural urbanizing areas to reduce sediment and bacteria load to impaired streams.

Ground Water

- Expand and improve ground water quality data collection. Use data to better understand ground water quality trends and problem areas.
- Establish requirements for community septic systems and wells.
- Develop and implement local protection plans for important sources of drinking water (known as wellhead protection or source water assessment plans).
- Develop policies and ordinances that promote infill development to take advantage of public water supply and wastewater treatment facilities.
- Strengthen well construction requirements and oversight, especially for wells that intersect more than one aquifer.

Issue 5: Public Outreach and Education

Goal: Provide appropriate information in a variety of ways to ensure the public and stakeholders are informed about the importance, character and condition of Treasure Valley water resources and water issues.

Background

Many presentations and virtually every discussion group at the Treasure Valley Water Summit noted the need for a more informed public. Key audiences include the homeowners, public officials and decision-makers, stakeholders and the general public. Participants believe these audiences need to be more informed about water supply concerns, conservation, activities that cause pollution, and flood risk, and the effects of urbanization and flood plain development, to name a few. An informed public is better able to manage their individual activities and effectively participate in dialogue about public policy decisions.

Recommendations

- Develop a coordinated multi-agency public education and outreach plan to inform key audiences about water issues. Agencies and organizations would agree to take responsibility for specific elements of the plan, consistent with their authorities and interests.
- All governments and organizations should increase their public information and outreach activities consistent with the multi-agency outreach plan.

Strategy for Moving Forward

The next steps will be to develop consensus and mobilize resources for collaborative efforts to address the most important issues and to incorporate recommendations in urban planning and water management efforts. On April 4, 2002 Treasure Valley decision makers met to consider the major recommendations from the Water Summit and identify priority work areas for the near future. Participants in the workshop identified the following priorities:

1. **Develop a collaborative master plan for the Boise River corridor.** The plan should engage a wide group of stakeholders to address river issues associated with growth, with particular emphasis on flooding. The plan should seek multi-objective solutions that address access, flooding, land use in the floodplain, open space, recreation, water quality, riparian habitat and gravel pit rehabilitation.
2. **Develop water management recommendations for local governments based on the best current information.** Our water resources will be managed most effectively if entities making decisions that affect water resources work toward common outcomes. Local governments should be partners with state and federal water management agencies, seeking to impact water resources with a common set of objectives.
3. **Develop a strategy for enhanced collaboration** among entities with water management authorities and interests.
4. **Conduct a comprehensive public information and education campaign** about water issues in the Treasure Valley.
5. **Identify and evaluate long-term management options to meet future water demands .** Recent multi-agency collaborative studies of future water needs, and ground water flow characteristics have provided valuable new information. Build on these efforts and use the Idaho Water Resource Board's current planning process to evaluate the hydrologic, institutional, economic and environmental impacts of alternatives for meeting future water needs. Evaluate surface and underground storage, transfer of existing storage and natural flow rights, conservation, recycling and reuse, opportunities to optimize reservoir operations and diversions from the Snake and Payette Rivers.

Appendix A: Agenda for the Treasure Valley Water Summit, January 14-15, 2002

Appendix B: Key Water Issues and Recommendations from Participant Small Group Discussions

Appendix C: Summary of Speaker Presentations

Appendix D: Recommendations from April 4, 2002 Follow Up Water Summit Meeting