

Session Abstracts

2nd Annual Salt Lake Countywide Watershed Symposium

October 28th and 29th, 2008

Abstract information listed in alphabetical order of the Session. Please note that several abstracts are unavailable.

Blueprint Jordan River-Making the Jordan River the Jewel of the Valley | Gabriel Epperson

- I. Project background and update
- II. Vision Summary...

Based on the input of nearly 1300 residents and local technical experts, let me share five of the “big ideas” that will be evaluated at upcoming open houses or by completing an on-line survey.

1. The Jordan River Natural Corridor - The “centerpiece” of the *Blueprint*, the Jordan River Natural Corridor, is a linear nature preserve, stretching over 20 miles and encompassing hundreds of acres of open space and natural parks.
2. Regional and Neighborhood “River Centers”- Commercial uses within the corridor could be clustered into “River Centers” to reduce the impact on the natural environment and create synergistic commercial benefits. River Centers could incorporate mixed-use development concepts and include businesses that are supportive of recreational uses or enjoyment of the River.

Continuous “Blue-Green” Trail from Utah Lake to the Great Salt Lake - The *Blueprint* includes the completion of the multi-use surface trail for pedestrians, cyclists and equestrians, and for the removal of the remaining barriers to lake-to-lake boating for kayaks, canoes and other non-motor boats. This continuous trail system can provide the backbone for world-class recreation.

Regional Trails - Regional trails connecting residents to the River directly from their neighborhoods show promise for increased usage and viability of the River trail system, and they will help to build a vital constituency that supports efforts to revitalize and protect the River. New trail connections can connect communities, reinvigorate neighborhoods, improve health and recreation opportunities, and connect residents to surrounding water-bodies and mountains, which will enhance our regional quality of life.

River Habitat Preservation and Restoration Opportunities - The *Blueprint* recommends a flexible framework for environmental policies that take varying current conditions of the River into account, playing off of our hosting the recent 2002 Winter Olympics. Generally, the River and surrounding land fall into three categories of environmental opportunity: Gold, Silver, and Bronze. Each “opportunity-level” has an associated list of species that can currently or soon be part of the River corridor in a given area, and a set of policy recommendations to ensure the stability and enhancement of each.

Challenges & Accomplishments in Open Space Acquisition | Lorna Vogt

Open space preservation has become a high priority for residents and cities within Salt Lake County and around the country. In 2006, 71% of the residents of the county voted for a general obligation bond to acquire open space, specifically along the Jordan River, the Bonneville Shoreline Trail, and to provide more recreational options. The county developed an acquisition plan to guide purchases and to ensure public funds were spent for appropriate lands. The county predicts that the entire \$24 million dedicated through the bond for open space will be expended by early 2009. This presentation discusses the lessons learned, challenges faced, and obstacles other public agencies can expect when allocating funds to open space.

Climate Change in Utah-What We Might Expect | Dr. Robert R. Gillies

In the arid and semi-arid Western North America, observations of climate change point to an increase in average temperature that is greater than the rest of the world’s average. In line with such a warming trend in climate, several studies of the precipitation regime for the region have documented less snowfall as evidenced by decreases in snowpack as well as earlier snow melt, increased winter rain events and reduced summer flows. An ensemble of global climate model (GCM) projections for Western North America reflect just such conditions in that they suggest intensifying drying conditions to be the norm for the Southwest region due primarily to Hadley Cell intensification. Regions that lie to the Northwest, the GCMs have as benefiting from increased precipitation but in transitional zones, i.e., between the wetter and drier zones, any gains in projected precipitation are offset by the likelihood of an increased frequency of above normal temperatures during the summer months; such results in an overall deficit in water resources.

Setting a Selenium Standard for the Great Salt Lake | Jeff DenBleyker | William O. Moellmer

Great Salt Lake (GSL) is a unique terminal lake located adjacent to Salt Lake City, Utah. Beneficial uses of GSL are protected through application of a narrative clause in the state water quality standards. The Utah Division of Water Quality (DWQ) initiated a process in 2004 to develop a site-specific water quality standard for selenium for open waters of GSL in response to specific concerns expressed by the public. The process DWQ initiated included formation of a Stakeholders Steering Committee and a Science Panel to identify the required studies, manage those studies, and recommend a site-specific standard. Studies were recently completed to assess concentrations and effects of selenium in five species of birds; measure selenium concentrations in water, seston, brine shrimp, and brine flies; measure selenium loads entering GSL; and measure flux of selenium from water through the food web. Information from these studies was used to “populate” the elements of a comprehensive conceptual model for GSL that is being used to establish the site-specific standard for selenium. The new standard is currently being evaluated by the State Water Quality Board.

Greywater, Pros and Cons in the Arid West |Ed Macauley

How widespread is graywater reuse in Utah, and what are the State's requirements for performing graywater reuse.

The Interaction of Salt and Water at the Surface of the Earth: A Case Study of the Great Salt Lake Ecosystem | Eric McCulley

Sodium and other salt-forming ions, such as potassium, calcium, and phosphorous have major effects on biotic conditions at the surface of the earth. Along the Wasatch Front in northern Utah, water distributes these salt-forming ions between weathering areas (mountains) and deposition zones (the Great Salt Lake). Precipitation interacts with rocks and soils in the mountain watersheds, altering the chemical composition of salts through simple and complex reactions. The concentration of salts in water, and the ability of soils to adsorb (hold onto) salts, affects nutrient cycling between water, soils, and biota. Salts carried by streams and rivers eventually enter the Great Salt Lake ecosystem, where they are concentrated in the lake and surrounding shoreline by evaporation. As precipitation and evaporation rates change over time, concentrations of salts in Great Salt Lake change, resulting in conditions that inhibit or enhance growth of many different life forms, influencing ecosystem dynamics. The Great Salt Lake and adjacent habitat is host to a vast array of life forms vulnerable to changing environmental conditions, including single-celled organisms, arthropods, mammals, and transcontinental migratory birds.

Jurisdictional Waters in Light of the Rapanos Decision | Matthew E. Jensen

On June 19, 2006, the United States Supreme Court issued a decision in *Rapanos v. United States*, 547 U.S. 715 (2006), that arguably limits the Federal Government's authority to regulate certain wetlands and other watercourses under the Clean Water Act of 1972. The *Rapanos* decision contains five opinions, none of which command a majority of the court. Thus, it was essentially left to the regulators (i.e., The Army Corps of Engineers and Environmental Protection Agency), those regulated, and the lower courts to decode the *Rapanos* decision. Now, more than two years since the decision was issued, the EPA and Corps have essentially settled on a regulatory framework for determining whether a particular wetland or watercourse is "jurisdictional" for purposes of Clean Water Act regulation. Numerous courts have also had an opportunity to interpret *Rapanos*. This presentation will (1) discuss the five *Rapanos* opinions, (2) explain the EPA and Corps' regulatory framework applying the *Rapanos* decision, and (3) briefly survey how lower courts have interpreted that decision.

Macroinvertebrates-Using Bugs to Monitor Water Quality | Jeff Ostermiller

Historically, Utah's Division of Water Quality primarily focused on water chemistry for the monitoring and assessment of Utah's streams. However, in the past 5 years significant progress has been made in the development and implementation of a quantitatively rigorous biological assessment program. The culmination of these efforts is the development of an empirical model that allows quantifies the loss of macroinvertebrate fauna that has occurred in streams as a result of human-caused disturbance. This presentation will provide the scientific underpinnings of the use of biological assessments for quantifying stream health. The development of DWQ's biological assessment model and the application of model outputs to assess impairment for the 2008 Integrated Report (303d list of impaired waters) will also be discussed.

Nutrient Removal in Wastewater Treatment Facilities | Paul C. Krauth P.E.

High nitrogen and phosphorus concentrations in surface waters can produce a variety of serious environmental and public health problems. Utah has begun to develop numeric nutrient standards for its priority waters through the TDML process and EPA is encouraging all states to accelerate these efforts.

The focus of this talk is how nutrient removal will be accomplished, either by natural biologic process, in wastewater treatment plants, rivers and lakes. Or by chemical methods for any pollutant source.

State of Our Stream Corridors, Using Rapid Assessment to Monitor Stream Health | Kathlyn Collins

The Stream Function Index (SFI) was first introduced to the public at the 2007 Watershed Symposium. The SFI is a rapid assessment protocol of stream habitat, hydrology, water quality and social factors that influence water quality and quality of life. The SFI is a tool to help identify water quality stressors along the streams and Jordan River in Salt Lake County. These areas are then candidates for enhancement projects. The SFI provides the framework for more detailed baseline and monitoring techniques may be used on these projects. The first complete dataset was collected during the 2007 and 08 field season and is considered to be baseline. The SFI will be repeated in full every 6 years in conjunction with the Water Quality Stewardship Plan. The provisional results shown in the presentation are for review and discussion. The final analysis and report will be available early 2009.

The Art of Effective Lobbying | Amy Defreese

Every year, Utah legislators make, change and eliminate water policies that ultimately define how our water resources will be used. New policy can affect which water development projects move forward, how they will be funded, and whether our state officials will fully evaluate alternatives to those projects. As water resource specialists and citizens of Utah, we have equal opportunity to participate in the legislative process and influence future water policy. In this session, Amy Defreese will speak to the art of effective lobbying. Participants will leave with an understanding of the lobbying process, the various venues for lobbying and how to ensure your voice makes a difference.

The Great Salt Lake-Issues and Projects | Jodi Gardberg

Governor Jon Huntsman signed an executive order on August 25, 2008 to create a Great Salt Lake Advisory Council. The council is charged with conducting a comprehensive assessment of Great Salt Lake with long term viability of the resource as the goal. The Governor appointed members to the council who are stakeholders of Great Salt Lake rather than agencies. This presentation will introduce you to the Council members and their charge.

The Utah Lake Commission: Objectives, Planning, Priorities | Reed S. Price

In 2007, the Utah Lake Commission was established through an Interlocal Agreement among local municipalities, state agencies and a special district to provide comprehensive planning and coordination among stakeholders of Utah Lake. Commission members include fourteen cities, Utah County, the Central Utah Water Conservancy District, the Department of Natural Resources, the Division of Forestry, Fire, and State Lands, the Department of Environmental Quality, and a Utah State House of Representatives legislator.

The objectives of the Utah Lake Commission are to:

1. Encourage and promote multiple uses of the lake;
2. Foster communication and coordination;
3. Promote resource utilization and protection;
4. Maintain and develop recreation access;
5. Monitor and promote responsible economic development.

In November 2007, the Commission selected a consulting team to assist the Commission in the development of a master plan to accomplish the Commission's objectives. This plan is comprised of five elements: land use and shoreline protection, transportation, natural resources, recreation, and public facilities.

The plan is being developed using input from the public, the Commission's Technical Committee, four sub-committees, and the Commission's governing board. The process includes:

- Development of an Existing Conditions Statement and accompanying maps
- A Visioning Workshop that will result in a Vision Statement(s) for Utah Lake's future
- An Opportunities and Constraints Workshop and accompanying maps
- Three public open houses
- Recommendations on funding master plan implementation

The Master Plan will document the planning process and become a policy guidance document for the Commission to use in assessing future proposed projects related to Utah Lake. The plan should be completed and adopted in early 2009.

**Using Microbes to Determine Sources of Pollution in Emigration Creek |
Dr. Ramesh Goel**

Maintaining surface water quality is always a challenge in today's technological driven society. Among many organic and inorganic contaminants, microbiological agents pose a greater risk of health hazards especially if the microbiological agents are coming from human sources. Evaluating the source of microbiological agent involves a technique called microbial source tracking. This presentation will put an overview of microbial source tracking with some recent research results obtained in Emigration creek canyon using library independent approach.

**Watershed Planning – What We've Learned and How We Can Move Forward |
Natalie Rees**

Over the past three years, Salt Lake County has worked with numerous stakeholders to develop a Countywide Water Quality Stewardship Plan (WaQSP). The WaQSP updates the existing Area-Wide Water Quality Management Plan and will guide water quality improvement, preservation, and enhancement efforts for the next six years and beyond. This presentation will: 1) provide background information regarding watershed planning in Salt Lake County, 2) discuss the WaQSP document, planning process and implementation recommendations, and 3) focus on how the County anticipates moving forward with an adaptive management process to implement, update, and inform water quality planning in this watershed.