

Willamette Water 2100 Stakeholder Learning Action Network (SLAN) Mid-Willamette Basin Water System

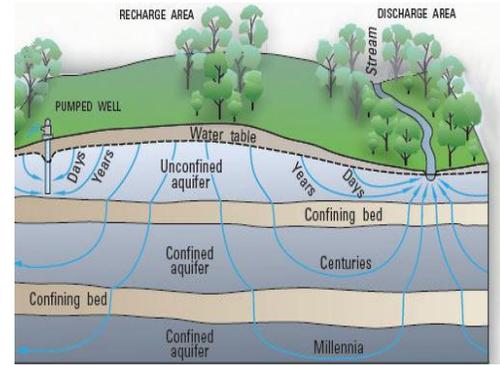
Field Trip



**City of Albany
Talking Water Gardens**



**Santiam
Water Control District**



**Groundwater Supply
Aquifer Storage and Shortages**

* Images from Google Image Search

**Arranged by the Willamette Water 2100 Broader Impacts and
Stakeholder Outreach Subgroup**

August 4th, 2011

Final Itinerary

- 7:45 AM** **Depart Corvallis from Oregon State University Motor Pool in Tour School Bus**
 OSU Motor Pool is located at 3400 Campus Way, Corvallis, OR 97331. Tour participant parking will be provided behind locked gates at the Motor Pool.
- 8:30 AM- City of Albany Talking Water Gardens Tours**
9:30 AM 500 Waverly Dr NE Albany, OR 97321
- 10:30AM- Santiam Water Control District**
11:30 AM Meet at 284 E. Water Street Stayton, Oregon 97383; Tour stops across District
- 12:00 PM- Lunch at Woodmansee Park: Buffet Lunch from the Sassy Onion**
12:45 PM Shelter at Woodmansee Park at 4629 Sunnyside Rd SE in Salem
- 1:15 PM- City of Salem Aquifer Storage and Recovery Project**
2:15 PM Woodmansee Park at 4629 Sunnyside Rd SE in Salem
- 2:30 PM- Willamette Basin Groundwater Supply and Storage**
3:30 PM Fresh Start Market, 3020 Center St. NE in Salem
- 3:30 PM- Field Trip Debrief & Discussion**
4:30 PM Fresh Start Market, 3020 Center St. NE in Salem
- 4:30 PM- Leave and to Return to OSU Motor Pool**

***All Tour Participants are strongly encouraged to be part of the Tour Bus** to allow for discussions, question and answers, and overall better field trip experience while reducing the amount of cars on the road. **Please let Adam know if you will be joining the tour Bus** (adam.stebbins@co.benton.or.us;541-766-6085)

Field Trip Purpose:

Researchers from the Willamette Water 2100 project at Oregon State University, Portland State University and University of Oregon, and others are invited on a field trip within the Middle Willamette Water System as part of a Stakeholder Learning and Action Network (SLAN) to:

- 1) Improve our visual and working understanding of the water system and how our actions in one part of the system are connected to and/or can impact another part of the system.
- 2) Learn and discuss how different attributes and uses of the water systems we visit in the field can be represented in a modeling framework called Envision. Envision will be used to integrate the many parts of the water system into a “whole” and help develop scenarios for anticipating future water scarcity under different policies, land uses, management, demographics and climate change.
- 3) Enable researchers and stakeholders to share their perspectives on water scarcity and learn from each other’s expertise.
- 4) Enhance the ability of the stakeholders learning network to teach/explain to others about the complex Willamette Basin system.
- 5) Prepare for a **formal focus group meeting, to be scheduled for June Oregon State University** to help guide model development/use.

Willamette Water 2100 project scientists will be participating in the field trip as co-learners of the water system, ask questions, share information, answer questions and discuss needs regarding how their respective research groups will be compiling and using a wide range of information to support development of future water scenarios using the Envision Model Development.

Introductions and Overview

Dr. Jeff McDonnell, Oregon State University Institute for Water and Watersheds

Commissioner Linda Modrell, Benton County & Commissioner Craig Pope, Polk County

Dr. McDonnell will provide an overview of the Willamette Water 2100 project.

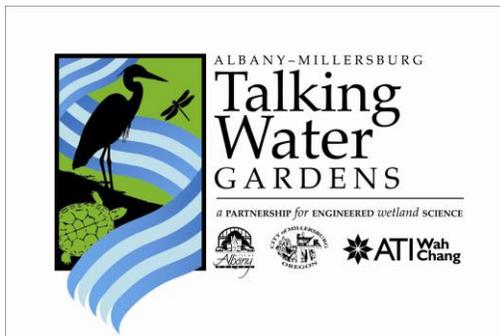
Commissioners will share their experiences with water supply issues, and their interest in the Willamette Water 2100 project.

Mid-Willamette Water System Willamette Water 2100 Tour Locations

Field Trip Begins: Leave Oregon State University Motor Pool

Field Trip Stop #1 City of Albany Talking Waters Garden

Presenter: Tom Tenpas, Water Reuse/Wetlands Coordinator



Overview:

Located on the banks of the central Willamette River, the Cities of Albany and Millersburg have joined with metals manufacturer ATI Wah Chang to create a new kind of water reclamation system inspired by the surrounding environment: an engineered wetland that mimics the cleansing and cooling characteristics that occur in nature. The Albany-Millersburg Talking Water Gardens are the first public/private engineering project of its kind in the United States: an integrated

wetlands system designed to provide an additional level of natural treatment for a combined municipal and industrial treated wastewater flow.

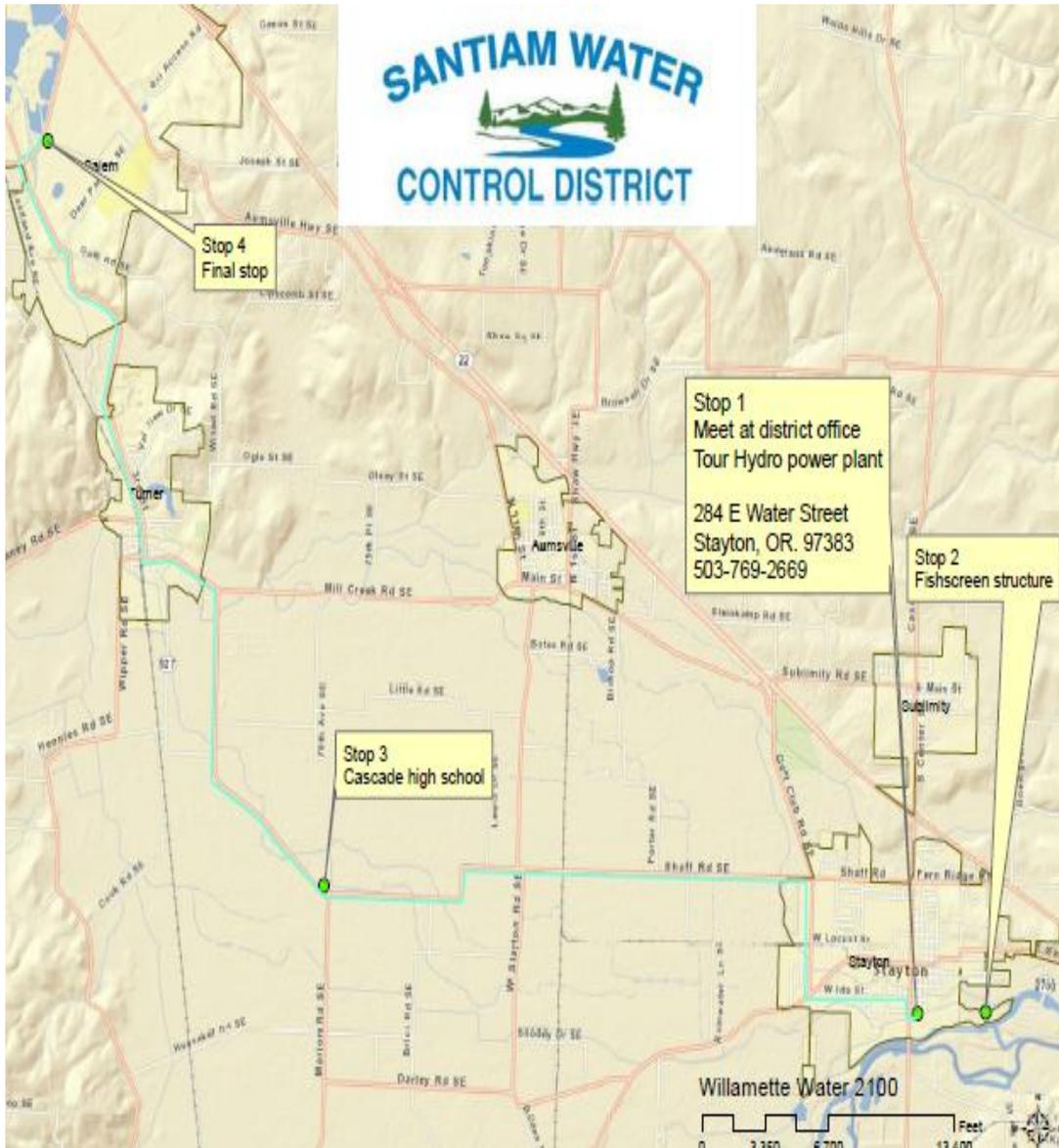
Assisted by CH2M HILL, the collaboratively developed project has created 39 acres of new emergent wetlands on a 50-acre site marked by waterfalls, wetland plants, and walking trails. The water reuse project will be a significant public amenity and education opportunity in the Willamette Valley. With construction set to be finished in June 2011, the site will remain closed for another 12-18 months to foster revegetation and the return of wildlife. Talking Water Gardens total project cost is \$13.75 million: \$8 million in federal funding, the Cities contributed \$2.5 million and ATI Wah Chang contributed \$3.25 million for its share of the project.

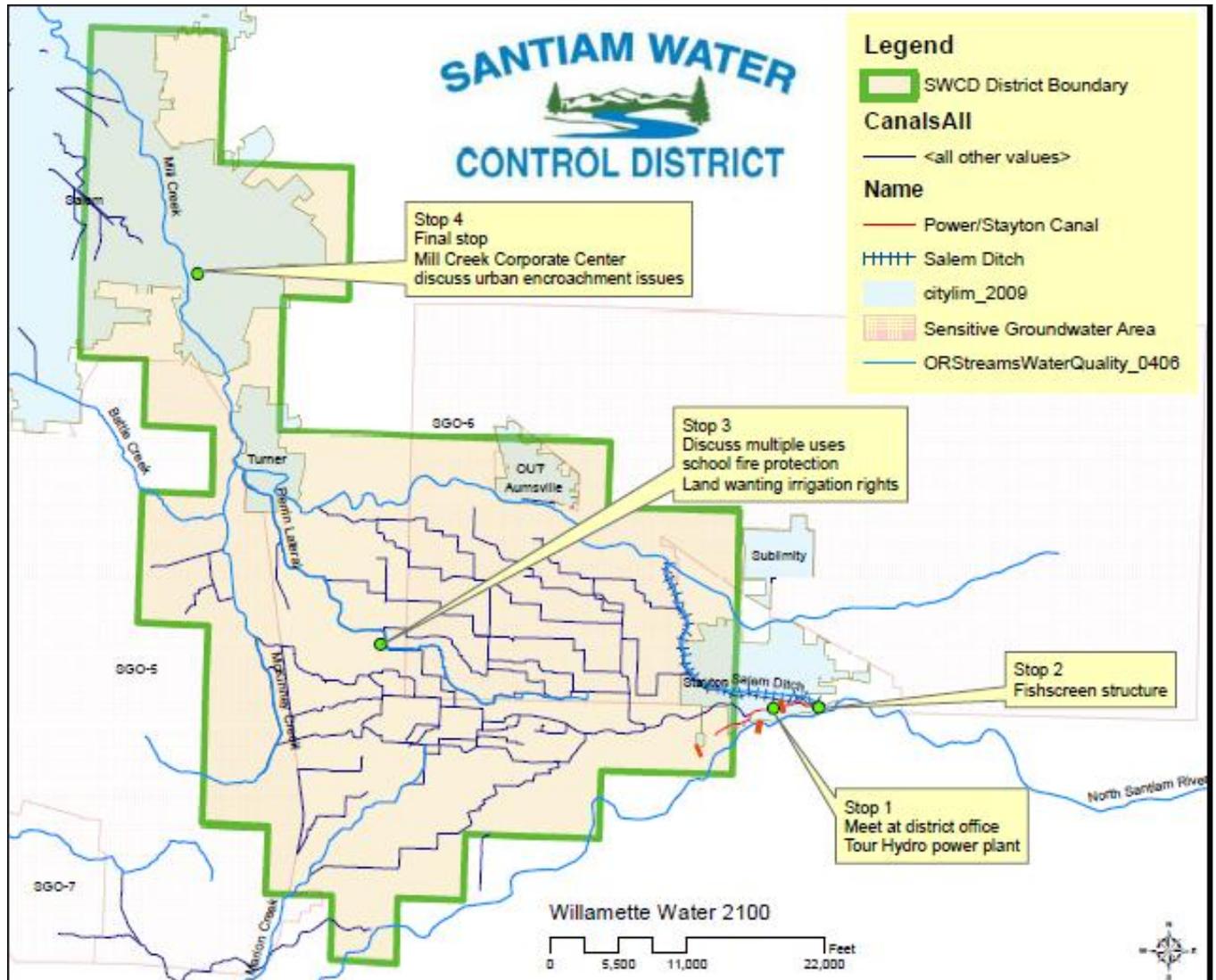
Field Trip Stop #2. Santiam Water Control District

Presenter: Brent Stevenson, Manage

Overview: The Santiam Water Control District (SWCD) provides Irrigation water in the Salem-Stayton areas. The District generates hydropower with water diverted for other uses such as domestic water to the city of Stayton, fire protection, wildlife use, wetland restoration, and aesthetic use to mill creek for city of Salem.” Multiple-use current and future management of water resources and irrigation issues now and in the future.

The attached maps provide an overview of the tour locations that the Willamette Water 2100 Stakeholder Learning Action Network will be visiting. Discussion of general irrigation district issues, specific pressures from urban and rural demands for water will also be a focus for the field trip locations.





LUNCH 12:00 PM-12:45 PM City of Salem, Woodmansee Park

Field Trip Stop #3 City of Salem Aquifer Storage and Recovery Project

Presentation/Discussion: Jason Pulley, City of Salem Public Works

Overview: Development of the City of Salem's ASR system began in 1996 and presently consists of four ASR wells with a production capacity of approximately 9 million gallons per day (mgd). The wells range in depth from 327 to 350 feet below ground surface and target the Columbia River Basalt as the host aquifer. The City currently stores 500 to 550 million gallons of water in the aquifer for use during peak summer demand months.

As the first ASR system in Oregon, the City faced many hurdles in system development, including the fact that no regulatory framework existed for ASR development and operation.

Since that time, the City has been on the forefront of ASR development in Oregon and continues to evolve the ASR system to meet changing demands and system requirements.

Over the past ten years, the City has encountered many issues with ASR operations, including distribution system limitations, taste and odor issues, monitoring and sampling requirements, and well field protection, among others. Many issues have been resolved, yet there are still areas of ASR operations that the City continues to work through. Work is currently underway to determine the true storage capacity of the aquifer, retrofit the wells to allow integration into the City's SCADA system, and determine the feasibility of additional pumping capacity to serve the City as a true secondary water source. With more than ten years of operational history, there are many lessons learned from Salem's ASR system that are beneficial to other ASR operators.

Field Trip Stop #4 Willamette Basin Groundwater Supply and Storage

Presentation/Discussion: Jen Woody, Oregon Water Resources Department, Hydrogeology

Overview: The northern Willamette Valley and much of the Columbia River plateau contain many sources of groundwater that are isolated in volcanic rock... The Commission has established 12 "groundwater limited areas" in the northern Willamette Valley." Focus will be on understanding the current and likely future groundwater supply issues within the Willamette Basin, and current/future ways of managing groundwater resources under increasing populations and changing climate within the Willamette Basin

Field Trip Debrief & Discussion at Fresh Start Market:

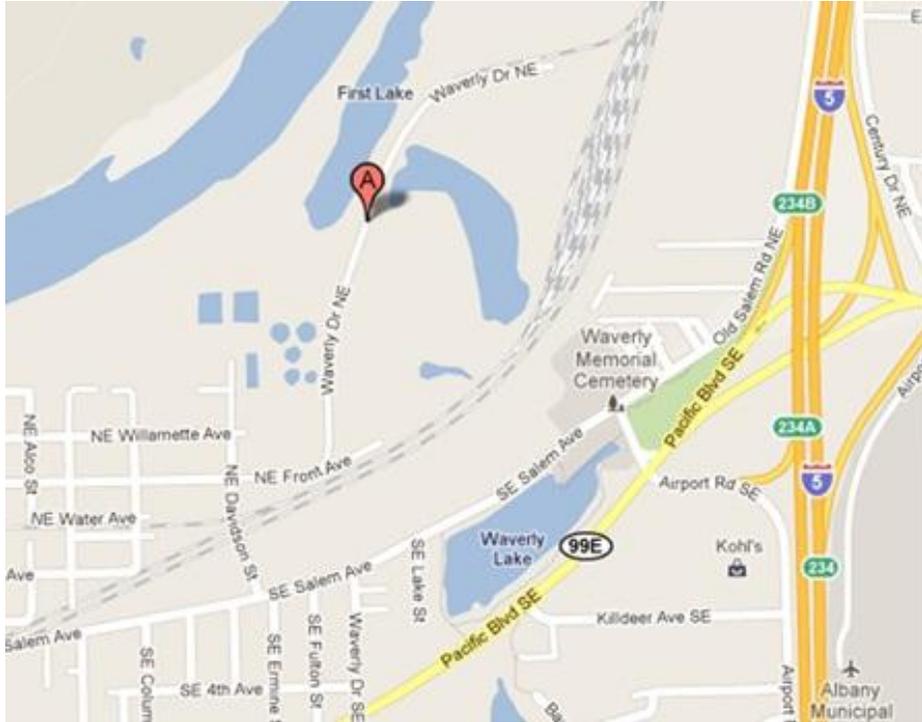
3020 Center St. NE in Salem

The group will discuss useful information discussed on the field trip, and how to build upon

Leave to return to OSU Motor Pool by!

Thanks!

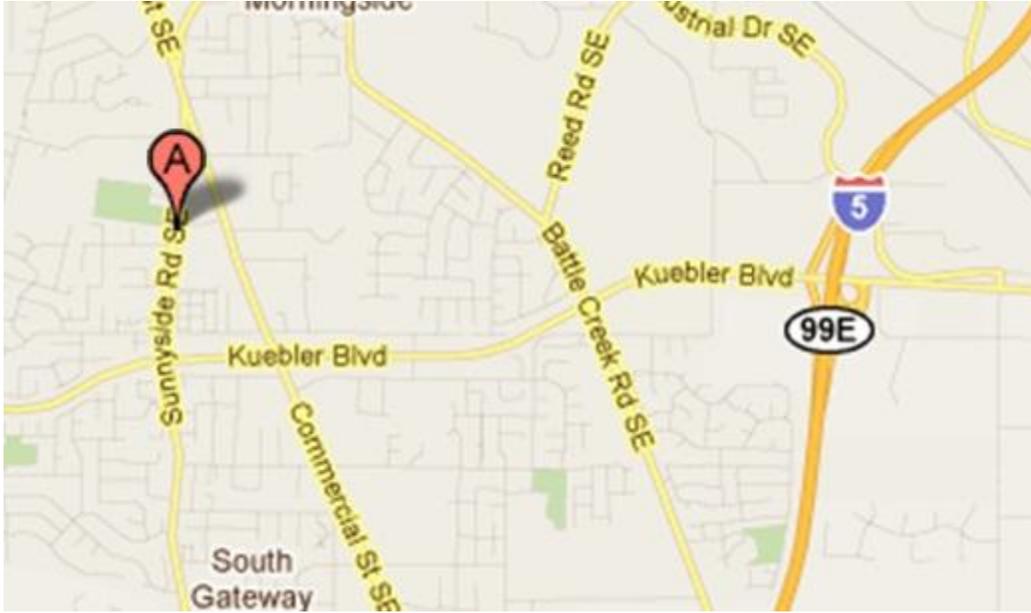




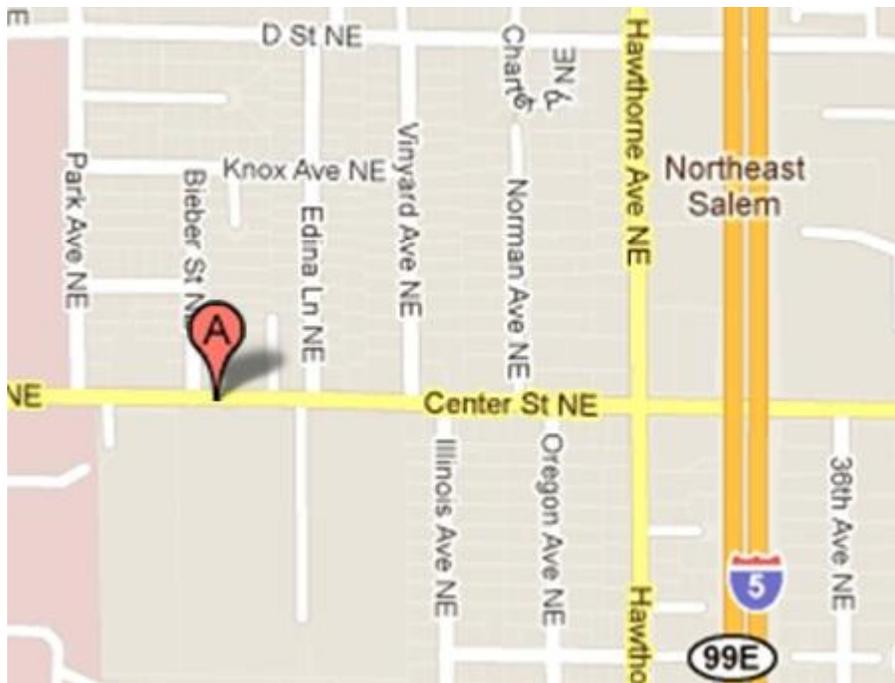
City of Albany Talking Waters Garden



First meeting Location at Santiam Water Control District



Woodmansee Park, City of Salem



Fresh Start Market