

## **North Santiam Basin Summit III**

### **Meeting Summary**

April 12, 2013 – 9:00 am – 3:00 pm  
Marion County Public Works Department  
5155 Silverton Road, NE  
Salem, OR 97305

### ***Meeting Material***

The PowerPoint presentations from Summit III are posted on the North Santiam Watershed Council website <http://www.nisantiamwatershed.org/>

### ***Attachments***

Agenda  
Summary of Breakout Sessions (Attachment A)  
Voting on Priorities (Attachment B)  
Attendance list (Attachment C)

### ***Meeting Purpose***

To build on the successes of the April 2011 and 2012 Summits and on work efforts since those Summits. Successes have included:

- Survey for Research and Monitoring
- Emergency Management Plans Crosswalk
- Emergency Management and Research/Monitoring Workgroup Meetings
- Arc GIS Online workshop.
- Two well attended Summits that informed participants and allowed for basin-wide consideration of issues of concern

## **WELCOME, UPDATES AND INTRODUCTIONS**

### ***Welcome and Agenda Review***

Bob Wheeler of Triangle Associates introduced Robert Chandler, Salem Interim Public Works Director, who welcomed Summit participants and thanked them for their participation. Bob then reviewed the meeting agenda and logistics.

### ***Review of Project History and Milestones [Patricia Farrell (City of Salem) and Liz Redon (North Santiam Watershed Council)]***

Patricia Farrell began by announcing that Liz Redon was leaving the North Santiam Watershed Council to become OWEB's Willamette Region Program representative. Patricia noted that Liz had been instrumental in getting this project going, and thanked her for her contribution.

Patricia and Liz then reviewed the project history and milestones:

- In 2007-2008 they approached the Governor's office about the possibility of a collaborative effort to develop an integrated water management strategy for the watershed and were directed to Oregon Consensus (OC).
- OC was hired to conduct stakeholder interviews and develop an approach for a basin-wide collaborative effort. The OC interviews revealed an interest in collaboration and identified common interests, including an interest in data management and data sharing and increased communication and coordination.
- OC hired Triangle Associates to identify and assess options for moving forward with a collaborative process. The conclusion was that a basin wide emergency management plan was the best starting point for addressing the common interests.
- Summit I, held in April 2011, provided an opportunity to meet as a watershed to discuss emergency response and identify next steps. Before the Summit, an online survey developed by OC and Triangle Associates identified the top emergencies of concern as flood, infrastructure failure, hazardous material spills and drought.
- Based on the Summit I discussions, two workgroups were created:
  - An Emergency Management Planning Workgroup. Eight emergency management plans were compiled to identify gaps, commonalities and opportunities.
  - Research and Monitoring. A Survey Monkey survey was created to inventory monitoring occurring in the North Santiam. The workgroups met in 2012 to review results and recommend next steps.
- Summit II was held in April 2012 to review Workgroup recommendations. A common theme at Summit II was the need for an interactive mapping system that compiled monitoring and research information with information on critical infrastructure and resource areas.
- Since Summit II, the following activities have occurred:
  - Meetings with agency advisors
  - July 2012. A WaterSmart grant proposal was developed, but did not receive funding
  - November 2013. ESRI presentation on GIS Online as a tool for emergency response and for mapping and sharing information.
  - February 2013 presentation to the Water Resources Commission to talk about this project as an example of place-based planning.

### ***Summit Participant Introductions***

Participants introduced themselves and responded to the following questions:

#### What do you hope to gain from the Summit?

- Develop relationships and partnerships
- Improve communication and coordination
- Efficiencies in monitoring strategies
- Information on GIS online tools, and how they can maximize ability to respond in an emergency situation
- Facilitate understanding of USACE operations in the basin
- Information on how to develop an emergency response plan for the Basin

- Facilitate emergency response planning
- Gain information on research, monitoring and projects in the Basin
- How to collect and share information and partner to ensure sustainable water quality and quantity in the future
- A better understanding about available data sets, tools available for managing data, and how data can "live in one place."
- Ways to reduce damages by preparing for an emergency response
- Learn more about ongoing efforts and how to be involved

#### What can you contribute?

- Information about their agency's research and monitoring efforts in the basin
- Technical advice (e.g. information on the Willamette Project Biological opinion, flood mapping)
- Technical assistance and on the ground staffing during an emergency response
- Information on grants
- Information about the data their agency collects in the basin and assistance to help people locally harness and use that data
- Information about Oregon Water Resources Department's Integrated Water Resources Strategy
- Information about the perspective of water users in the basin
- Information on the Eugene Water and Electric Board's (EWEB's) watershed emergency response plan for the McKenzie River
- Information about Salem's S.A.F.E information and GIS resources

#### **PRESENTATIONS AND DISCUSSION**

The PowerPoint presentations from Summit III will be posted on the North Santiam Watershed Council website <http://www.nsantiamwatershed.org/>

#### ***The McKenzie Watershed Emergency Response System: Lessons learned and New Directions (Karl Morgenstern, Eugene Water and Electric Board)***

EWEB developed a Drinking Water Source Protection Program to protect the McKenzie River, which is the source of Eugene's drinking water. The city's intake is at the bottom of the watershed. The objective of the program is "to measure the balance between watershed health and human use over time and to implement actions that maintain a healthy balance for production of exceptional water quality." Disaster preparedness and response is one element of the Drinking Water Source Protection Program.

EWEB conducted a risk assessment to rank the risk that various activities/events posed to drinking water. HazMat transportation spills ranked as one of the top three risk categories. According to an ODOT freight survey, there are 500 trucks per day using the McKenzie River Corridor, with 3-5% carrying hazardous material. MWES focuses on petroleum because petroleum is the most likely threat to the watershed. Twenty-six (26) state, federal and local

agencies participate in the program. Some agencies provide data, equipment or information on certain areas; others participate in drills.

The overall goal of the MWES is to provide first responders with the tools they need to avoid confusion and implement response actions to stabilize an incident within the initial hours of the spill or chemical release. MWES has three components:

- Response information (GIS), compiled and updated from partner agencies and easily accessible for first responders.
  - GIS information was originally located on individual PC's but a transition is being made to web-based GIS using the ARC GIS platform. The information includes:
    - Response strategies. Forty-nine (49) response strategies have been developed throughout the watershed at accessible areas with slow water. MWES contains information on each response strategy (e.g., access areas, staging areas, locations for deploying boom, boom angle, amount of rope and boom needed, watercourse description.)
    - Hyperlinks to flow gauges and weather stations. MWES can generate reports showing the length of time before a spill reaches a certain area
    - Location of critical resources to be protected (e.g., spawning areas, wells, intake areas)
- Response equipment and resources: inventoried from 27 federal, state and local agencies.
  - MWES includes equipment inventories (e.g., equipment amount and location, distance from the spill, who to call to access the equipment), and a database with contact information, roles and responsibilities of those involved in spill response. Training information for each individual will be added in the future.
  - When creating equipment lists, it is important to begin with a standardized list of equipment names.
  - EWEB has four trailers with equipment staged in the watershed for responders to use.
  - Keeping data on agency contacts and equipment updated is critical. When people log into MWES, they get agency records to update.
- Interagency training/drills. Nineteen (19) trainings and drills have been conducted involving 428 people from 33 agencies and organizations
  - Interagency drills are critical for building relationships, learning to work together, and testing response strategies.
  - Drills are conducted once or twice a year to test out a response strategy. As a result of these drills, 16 response strategies that do not work have been eliminated.

Karl reviewed the process EWEB used to develop the MWES:

- McKenzie Fire and Rescue sent out a questionnaire to 30 agencies and organizations that included the following topics:
  - Interest in participating in watershed response planning
  - Existing emergency response plans
  - Level of personnel training

- Agency responsibility in the event of a spill
- Level of preparedness
- Equipment and spill contractors
- Emergency notification and contacts
- EWEB and the McKenzie River Watershed Council sent letters encouraging agencies and organizations to respond.
- Karl held one-on-one meetings with each agency and organization to discuss questionnaire responses, find out what GIS data they had and their ability to respond to a spill.
- A kick-off meeting was held to review the questionnaire and interview results and to demo the GIS concept.
- Funding. Goals, gaps and needs were clearly identified. Funding requests were made as a partnership, but were submitted by the individual agency that was the best fit for the particular funding request. EWEB wrote grants and provided matching funds and resources to manage the grants and do the work. EWEB also provides annual funding to first responders.
- Leadership and ownership of the process is critical.

Karl then reviewed lessons learned and new directions for the MWES:

- Lessons learned
  - Use a web-based GIS system
  - Data updates are critical
  - Annual drills are critical
  - Use the equipment (some responders are reluctant to use EWEB's equipment)
- New directions
  - MWES is being transitioned to a web-based GIS system
  - Based on the results of the annual drills, response strategies are being reduced to those that work
  - Provide 911 with a call down list. Do not rely on first responders to spread the word.
  - Expand to a regional system (not just the McKenzie)
  - Track trained personnel for response call out
  - Region 2 HazMat team takes ownership
  - EWEB provides an annual budget for equipment support

### Discussion

Summit participants offered the following questions and comments on the presentation:

- Which response strategies have been eliminated? Answer: Drills have been conducted on some response strategies; eventually all response strategies will be drilled. Based on these drills, response strategies that do not work have been eliminated.
- Has the system been implemented and found to work? Answer: There has not been a major spill in the river, but there have been practices to test the system.
- A Summit participant observed that this system points out the benefits of having local data. Creating this local data needs to happen, but it is a struggle.

- Have agreements been developed with property owners to establish anchor points for boom? Permanent anchor points have not been established. Landowners are contacted before drills occur; no one has refused access.

***Developing a Source Water Protection Plan using ArcGIS Online (Stacey Garrison, City of Salem)***

Stacey Garrison provided an overview of the City of Salem's Watershed Program and their plans for using ArcGIS online.

- The city has conducted monitoring since the North Santiam became Salem's drinking water source in the 1930's.
- The importance of monitoring became apparent during the 1996 flood when the sand filter in the city's water filtration system became clogged due to high turbidity.
- A Source Water Assessment was conducted in 2003 to identify the level of risk in the watershed. High permeability soils that are more likely to convey contaminants into streams and potential contaminant sources (e.g., gas stations, dry cleaners, places where chemicals are stored) were mapped.
- The city collects its own field data on water quality (e.g., nutrients, pH, temperature, turbidity, algae). The city funds four USGS water quality stations. Water quality conditions are monitored because of their potential impact on treatment and production of drinking water. For example, algae blooms and turbidity can impact the city's filtration system and increase operational expenses.
- The city obtains data from other agencies (e.g., data on dam operations, climate and streamflow conditions, and forest fires). All of these could impact water quality.
- The city wants to move towards:
  - Integration of spatial information with dynamic water quality and watershed activities data.
  - Real time tools that facilitate rapid situation analysis and enable timely decision-making.
  - Organization of data to inform long-term decision.
- The city has been looking at ArcGIS online for data organization, access, and sharing.
- The city is in the early stages of developing a spill-flow path tool to determine where a spill will go and how fast it will move. Culvert locations are being mapped as part of this effort.

***From Mountain Top to River's Mouth, an Overview of US Geological Survey Activities in the North Santiam River Basin in the Past Ten Years. (Glen Hess, U.S. Geological Survey)***

Glen Hess gave an overview of the following USGS projects or studies in the North Santiam river basin:

- Debris Flows from Failures of Neoglacial-Age Moraine Dams in the Three Sisters and Mount Jefferson Wilderness Areas, Oregon  
(<http://vulcan.wr.usgs.gov/Volcanoes/Cascades/Publications/PP1606/framework.html>)
- Analysis of Geomorphic and Hydrologic Characteristics of Mount Jefferson Debris Flow, Oregon, November 6, 2006 (<http://pubs.usgs.gov/sir/2008/5204/>)

- USGS gauging stations. USGS maintains a network of water gauges in the North Santiam, in cooperation with the City of Salem, the North Santiam Watershed Council and the USFS.
- North Santiam River turbidity, sediment, and water quality network (1999-2010) monitored and determined turbidity sources in basin.
- Measurement of total dissolved gas at Niagara gauge.
- North Santiam River Streamflow and Water Temperature Modeling.
- Santiam Basin USGS CE-Qual-W2 Models
- Modeling Downstream Temperature of Operational and Structural Changes to Detroit Dam, Oregon. GET URL
- Detroit Lake data network (gauging stations, weather stations, lake profile stations))
- An Environmental Streamflow Assessment for the Santiam River Basin, Oregon (<http://pubs.usgs.gov/of/2012/1133/pdf/ofr20121133.pdf>)
- Effects of Algae on Operations and Geren Island Slow-Sand DWTP
- Flows - North Santiam River at Geren Island (2005-2010)
- Flows at mouths of Willamette River tributaries [gains or losses between USGS gauge at mouth at six Willamette River basin tributaries (2011-2014)]
- USGS Data Grapher (real time flow data) <http://or.water.usgs.gov/grapher>
- Hydraulics and 1-D water temperature HECRAS model

Glen mentioned two other potential projects in the basin:

- North Santiam river basin flood inundation mapping (FIM). Flood inundation maps translate a hydrograph into operational maps that communicate risk and consequences
- North Santiam River spill time of travel tool for determining how far downstream a parcel of water travels. Time of travel data is available for some other streams, but only in the Willamette Basin.

***Evaluation of Instream Flow Needs for Spring Chinook and Winter Steelhead (Rich Piaskowski, U.S. Army Corps of Engineers)***

Rich presented an overview of a USACE study to identify instream flow needs for spring Chinook and winter steelhead. This is one of several studies conducted by USACE in order to make the fish habitat improvements called for in the Biological Opinion (BiOP) for the USACE's Willamette Valley Project.

The goal of the study is to identify the relationship between river flow rates and habitat conditions. The study includes the North Fork Santiam river between Big Cliff dam and Wiseman Island and the South Santiam River from Foster dam to Lebanon.

The schedule for the draft report is May 2013. The final report is scheduled for July 2013.

***Environmental Flow Recommendations for the North Santiam River (Leslie Bach, The Nature Conservancy)***

Leslie described the work by TNC and USACE to develop environmental flow recommendations for the North and South Santiam rivers. This is part of a larger effort to develop environmental flow recommendations within the USACE's Willamette Basin project. Environmental flows have been defined as the "quantity, timing and quality of water flows required to sustain freshwater and estuarine systems and the human livelihood and well-being that depend on these ecosystems."

The process began with an analysis of pre and post dam hydrology. One of the key hydrologic changes that occurred as a result of dam construction is the elimination of very high flows. An expert workshop was conducted to review the hydrologic information, derive flow-ecology relationships (i.e., how species and habitats on the river have responded to changes in flow) and develop environmental flow recommendations. Environmental flow recommendations were developed for the North and Santiam Rivers for fall, winter, spring and summer under low flow and high flow conditions. The flow recommendations address magnitude, duration and timing of flows, and identify the ecological benefits that the flows are intended to achieve. The ecological benefits of flow restoration are: germination and survival of native riparian vegetation; upstream and downstream fish migration; floodplain connectivity and wetland habitat; survival of native floodplain species. Flows must fit in with other USACE requirements and regulations.

The next steps in the process are:

- Complete basin-wide flow modeling to integrate with overall reservoir management
- Develop an implementation plan
- Implement, monitor, review, adapt

### Discussion

Summit participants offered the following questions and comments on the presentation:

- Has an attempt been made to capture groundwater interaction? Answer: Higher flows swamp groundwater; groundwater may be more relevant for low flows. Groundwater is also important for cold water refugia. The USGS studies did not consider groundwater.
- How important is the data for side streams? Answer: Very important. For example, on the Middle Fork of the Willamette when gauge information from side streams was plugged back into the USACE Hec-Res model it was discovered that side channel connectivity could be achieved with lower flows than originally thought. Consideration is being given to putting in more gauges to obtain this information.

### **BREAKOUT WORKGROUPS**

Summit participants broke out into workgroups to discuss their vision for the North Santiam basin. Attachment A contains a summary of the breakout session discussions.

### **DISCUSSION/WRAP UP**

Based on the results of the breakout session, Summit participants used an audience response system to take a series of votes to identify priority efforts to focus on in the basin, and the tools needed to support the priority efforts.

The sequence of votes is shown in Attachment B. The final results of the voting are shown in the chart below.

	<b>1 yr</b>	<b>5 year</b>	<b>Lead</b>
<b>Priorities</b>			
Water quality/water quantity research and monitoring	More efficient information gathering	Coordinated data collection	Silver Jackets
Flood emergency			Marion Co working with USCOE
GIS Mapping			Salem helped by Marion County
<b>Tools</b>			
EWEB Model (all programs)	Start in one year	Complete in 5 yrs.	Salem
Data portal	Identify data sources	Functional portal	USGS
Awareness of flood risks/response/tools	COE work with locals in developing the plan.	Implementation	USACE

### Discussion

What would awareness of flood risks/response/tools include? Answer: Sharing USACE inundation mapping, working with USGS on better visibility of data and helping communities understand liabilities and resources available to respond to these liabilities.

### **CLOSING**

Robert Chandler thanked participants for attending the Summit.