Second North Santiam Summit
Emergency Management and Monitoring and Research Topics
Meeting Summary
April 13, 2012 – 10:00 am – 3:00 pm
Stayton Library
515 North 1st Ave.
Stayton, OR 97383

Meeting Material
The meeting material for the April 13 Summit will be posted on the North Santiam Watershed Council website http://www.nsantiamwatershed.org/

Attachments
1. Handout G - Research and Monitoring Work Group Recommendations (amended per discussion at the Summit)
2. Handout K - Emergency Management Planning Workgroup Recommendations (amended per discussion at the Summit)
3. Attendance List

Meeting Purpose
To build on the successes of the April 2011 Summit by reviewing the progress made since the last Summit and the work of the Emergency Planning and Research and Monitoring Workgroups in order to further efforts on emergency management planning and monitoring and research.

Meeting Objectives
- Develop specific actions for future work efforts
- Recommend next steps
- Consider ways to continue communication among the group

INTRODUCTION

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 reviewed the meeting agenda, handouts, and guidelines for a productive meeting.

Summit Participant Introductions
Summit Participants introduced themselves and described what they hoped to achieve in the meeting, including:
- Identify opportunities for data sharing
- Build relationships
- Clarify and define future goals

- Protect water supplies through emergency response planning
- Improve collaboration/coordination/communication
- Share and gain information about
    - Research and monitoring efforts in the basin
    - Projects in the basin
- Obtain a better understanding of focus and intent of the group and how the US Army Corps of Engineers (USACE) can add value; make connections with the USACE's downstream stakeholders
- Gain information on how we can work together on a smaller scale to implement the Willamette River BiOp
- Identify ways to make Statewide Planning Goal 7, Natural Hazards, more effective
- Identify next steps
- Learn how this effort can be tied to a source water protection strategy for drinking water.
- Make connections and do outreach

Project History and Review of Actions Since the April 8th, 2011 Summit - Patricia Farrell (City of Salem)

In 2007-2008 a permit application for a City of Salem water transmission pipeline; a FERC hydropower application; and the Willamette River Biological Opinion (BiOp) were underway concurrently in the watershed. They relied on different data sets and different mitigation strategies, and did not appear to be coordinated. Patricia Farrell and Liz Redon of the North Santiam Watershed Council (NSWC) approached the Governor's Natural Resources Advisor about the possibility of a collaborative effort to develop an integrated water management strategy for the watershed. They were directed to Oregon Consensus (OC) which was subsequently hired to conduct stakeholder interviews and develop an approach for a basin-wide collaborative effort.

Stakeholder interviews conducted by OC revealed overall stakeholder interest in participating in a collaborative effort, and the following commonalities in stakeholder interests:

- Communication
- Data management
- Coordination
- Balancing conflicting uses
- Protecting habitat and water quality.

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.

Forty-five stakeholders attended the first North Santiam Summit on April 8, 2011. Based on Summit discussions, an Emergency Management Planning Workgroup and a Research and

Monitoring Workgroup were formed in 2012. The workgroups met on February 27 and 28, respectively. The results of these workgroup meetings will be discussed today.

Benefits of coordination at a watershed scale in the North Santiam - Liz Redon (North Santiam Watershed Council)

The Oregon Consensus interviews indicated an interest in and need to collaboratively address complex water management issues in the North Santiam. However, it was felt that the collaborative effort should be narrowly focused to prevent it from becoming unwieldy. Areas of interest identified at the first Summit were emergency management planning and research and monitoring.

The North Santiam watershed contains multiple jurisdictions, has multiple types of land use, and multiple state, federal and local agencies with land-management authority. There is a demand for water for multiple purposes (e.g., drinking water, commercial and industrial uses, recreation, agriculture and forestry, flood control, and endangered species.) The watershed is topographically diverse (steep canyons to flat valleys), and contains some isolated areas that could easily be cut off in the event of an emergency. It is important to keep the watershed healthy so that it can continue to support these various uses. Planning for emergencies at a watershed scale offers the best opportunity for keeping the entire watershed healthy.

Discussion:

Group members pointed out that while no law requires watershed-scale emergency management planning, there are advantages to conducting emergency management planning at a watershed scale:

- There are multiple jurisdictions in the watershed, which necessitates some level of coordination and collaboration.
- Watershed-scale emergency management planning could create funding opportunities and create synergies with federal agencies that are moving toward planning models organized at a watershed level (e.g., EPA's "Healthy Watershed Program" and the Department of Agriculture's "All Lands Approach").
- The Eugene Water and Electric Board (EWEB) developed a watershed-level emergency management plan for the McKenzie River watershed, and are developing some unique ways to gain financial support for the effort.
- The USACE has authority in the Willamette River basin to do cost-share watershed studies. However, these studies are not specific to emergency management.
- Other comments relating to the scale of emergency management planning were:
    - The federal government does not advocate for any particular emergency planning organizational structure. Although Oregon chose to adopt a statewide emergency planning committee, the Oregon State Fire Marshall's office is now encouraging development of Local Emergency Planning Committees (LEPC) organized at a county or multi-county level.
    - FEMA organizes things by the way they pass money down. All counties must have an emergency plan. One group member commented that FEMA's mapping is

watershed-based, but Hazard Mitigation Plans are county-based. This is creating problems.

It was noted that there are different levels of data sharing and multiple ways to share data. The simplest approach is sharing information about the results of a project. A more difficult, long-term goal would be to have compatible data sets stored in a common area.

MONITORING AND RESEARCH

Gail McEwen, Oregon Consensus, discussed a Survey Monkey survey developed by Oregon Consensus, Triangle Associates, the City of Salem and the North Santiam Watershed Council. The survey examined which agencies are conducting water quality and quantity monitoring or research, where, and for what parameters in the North Santiam Watershed, specifically in the six watershed HUCs, Detroit Reservoir and Big Cliff Reservoir.

The survey was sent to 31 agencies or organizations; 19 people responded from 13 agencies. (See Handout E for a list of the agencies that responded and a summary of survey results).

Fourteen organizations reviewed the survey results at a Water Quality and Quantity Monitoring Work Group meeting February 28. The workgroup included USGS, USFS, NMFS, ODA, ODEQ, ODFW, ODOT, OWRD, Marion and Linn Counties, Cities of Salem and Stayton, Santiam Water Control District, and the North Santiam Watershed Council. The workgroup provided additional information and recommendations for action regarding monitoring and research (See Handout H for a summary of the Water Quality and Quantity Work Group meeting and Handout G, Preliminary Recommendations for a Research and Monitoring Action Plan). In addition, the workgroup attendees created a map showing the general location of research and monitoring efforts in the watershed.

Gail McEwen reviewed Handout G with the group and asked for their feedback and recommendations.

Discussion on Handout G, Preliminary Recommendations for a Research and Monitoring Action Plan

General comments on research and monitoring

- Data from even short term monitoring projects can be useful if the project location is known.
- USGS is interested in information on Forest Service projects in the upper basin.
- Long-term monitoring data could be useful for analyzing trends or identifying emerging issues (like contaminants).
- Detecting and understanding trends takes a long-term commitment and lots of data. Trending is only one component of a comprehensive monitoring plan, which requires a

strategic monitoring design to understand the effect of land use management and whether current actions are working. All of this is expensive, which increases the need for coordination and collaboration.

- Data interpretation
    - Sharing data is awesome, but data interpretation often has a greater effect. How can agencies get together beforehand and share information that could improve data interpretation?
    - How can you avoid misinterpretation of data (particularly water quality and biological data)? Concerns about data misinterpretation could make agencies reluctant to share data. Suggestions offered by group members were:
        - Include metadata to describe the methodology for data collection and QA/QC, including any changes in methodology over time.
        - Describe any qualifiers that apply to the data.
- Standards for Quality Assurance/Quality Assessment (QA/QC)
    - The work group discussed specific research and monitoring projects, but not Quality Assurance/Quality Control (QA/QC) and how information from one research project could be used in others.
    - Local groups may have data we would like to include, but may not have QA/QC procedures, which are necessary to verify data quality. We may need to do capacity building to help some local groups improve the quality of their data collection.
    - Much water quality data ends up in EPA's STORET (Storage and Retrieval Data Warehouse). Data must meet standards to be included. Perhaps EPA's database should set the standards for data storage.
    - Collaboration is needed not only for data sharing, but also for sharing the data analysis methods.

Specific Comments on Handout G, Preliminary Recommendations
Preliminary workgroup recommendations, discussed below, are organized in three categories: Organizational Structure/Governance; Planning; Communication and Coordination. Gail McEwen reviewed the preliminary recommendations with the group and received feedback.

Organizational Structure/Governance
Given: Define the overall purpose of an organizational structure for basin-wide emergency response:

- Recommendation: Establish an ongoing workgroup that meets quarterly to implement the actions listed below.

    <u>Discussion:</u>
    Points made about the Research and Monitoring Workgroup:

- Some concern about how the workgroup would be involved in emergency response.
- Workgroup needs to contain a good array of all who have interests in research and monitoring.

Planning

- Recommendation: Work with DEQ to develop a more specific North Santiam interactive map that includes monitoring information as well as critical infrastructure and resource areas.
- Recommendation: Compile monitoring and research data and information so that it will be available to assist in emergency response and recovery.

  Discussion:
  The group discussed how research and monitoring data could contribute to emergency planning and response:
  - Emergency management planners do a hazard analysis, write plans to respond to hazards, and ensure that the plans and processes of emergency first-responders are folded in to the overall emergency response plan.
  - Monitoring and research data could be used to prioritize resources needing protection in an emergency (e.g., critical habitat areas for fish), and to help determine when an area has recovered. Other sources of information could also be useful in prioritizing resources for protection (i.e., the Willamette Project BiOp, ESA listed species).

- Recommendation: Consider a watershed monitoring plan similar to the Upper Deschutes Regional Plan. The emphasis is on maximizing the value of existing programs and resources by minimizing overlapping sampling efforts, filing key data gaps, increasing communication about results and facilitating coordination and cooperation among organizations.

  Discussion:
  - Glen Hess, USGS, provided information about the "Framework for Regional Coordinated Monitoring in the Middle and Upper Deschutes River Basin."
    - An interagency committee met for two years to develop a framework for coordinating the regional water-quality monitoring conducted by various agencies and organizations in the basin. (See http://or.water.usgs.gov/pubs_dir/Pdf/00-386.pdf for project report published in 2000.) Phase one of the project, like the North Santiam project, focused on sharing information about monitoring efforts, goals included:
      - Developing common QA/QC standards. The goal was not achieved, but understanding of agency data systems and standards increased.

        - Establishing a common location for data. The goal was not achieved, but establishing a portal linking agency databases would be easier today due to increased use of the Internet.
        - Securing funding for an ongoing overall coordinated monitoring program. This goal was not met, although funding was obtained for ongoing committee meetings for a period of years and for coordinated monitoring on specific issues like TMDL (Total Maximum Daily Loads). The final report and coordinated monitoring framework may make it easier to obtain grant funding.
    - If the Deschutes model is used in the North Santiam, the project should be done in phases. Phase 1 could include outlining a data-sharing model and sharing the map the City of Salem developed to show ongoing research and monitoring. Phase 2 could focus on capacity-building by providing information on QA/QC standards to groups that want to participate in the monitoring program and want to "raise the bar" on their data collection efforts.
    - Eugene Water and Electric Board's (EWEB's) watershed emergency response plan for the McKenzie River should also be examined as a potential model for the North Santiam. Karl Morgenstern should be invited to describe his work at a Research and Monitoring workgroup meeting or next year's Summit.

- Recommendation Assess and consider potential funding sources and programs.

  Discussion:
    - Long-term funding for this project is an issue.
    - If monitoring activities in the North Santiam were more coordinated, funding agencies might be more willing to fund monitoring
    - Some USGS water gauging stations may be lost because of funding reductions. Information on gauging station locations throughout the watershed would be helpful. It might be easier to argue to retain funding for a USGS gauging station that is the only one in the area, or important to several agencies or organizations.

Communication and Coordination

- Recommendation: Facilitate database exchange and sharing between groups – consider Pacific Northwest Water Quality Data Exchange as a means of fulfilling this action.
- Recommendation: Develop a map/tool that is open to the public and contains monitoring and research information.
- Recommendation: Work toward a system to share information, coordinate where feasible, and communicate results and efforts in order to spread knowledge of efforts, find efficiencies, and allow better interactions among all.

  Discussion:

- One option would be to create a portal for accessing the databases of various agencies.
    - The StreamNet database contains information on the location of fish species and spawning and rearing areas. StreamNet data could be linked into a North Santiam portal.
- The current map showing monitoring locations in the watershed needs revisions. For example:
    - The map may be omitting some information ODFW is collecting for the Willamette River BiOp.
    - Including all gauging and water quality stations in the basin would help in planning or assessing research and monitoring needs.
- Refining the map will require collaboration from all.
- It would be helpful to document reports and plans that have been published for some monitoring efforts in the watershed.
- Some data might need to be kept confidential if agencies or organizations are reluctant to share information on a public site.
- All data needs to include some simple metadata elements (i.e., location of data collection and a contact for information about the data). Metadata should be simple to provide.
- It will be important to describe qualifiers that apply to the data.

Group Recommendations

The group agreed on the following:

- Handout G, Preliminary Recommendations for a Research and Monitoring Action Plan, with amendments to reflect the group's discussion, will be the template/workplan for moving forward.
- Another Research and Monitoring Workgroup meeting would be held. Aaron Borisenko, Department of Environmental Quality, offered to host the next workgroup meeting.

WILLAMETTE RIVER SUSTAINABLE RIVERS PROJECT

Leslie Bach of The Nature Conservancy (TNC) discussed the Willamette River Sustainable Rivers Project. The Willamette is one of eight pilot sites under the Sustainable Rivers Program, a national partnership between the USACE and TNC that uses a science-based process to determine environmental flow requirements and an adaptive management framework to balance ecological and human needs.

Environmental flows are focused on management and protection of fish and wildlife, which is one of the authorized purposes of dams. However, dams have changed the flood hydrograph by dampening peaks. These peaks are important because they create habitat, scour channels, move material, provide cues for migrating fish and provide rearing habitat. It is not possible to return to a natural flow system; however, there are some aspects of the flow regime that are

important for fish and wildlife and that maintain ecological processes. The USACE and TNC work together to determine environmental flow requirements downstream of dams, and to identify opportunities to restore key aspects of the flow regime while continuing to meet the other authorized purposes of dams.

Pre and post-dam hydrograph data, ecological data, information from the literature and expert knowledge are used to develop environmental flow recommendations.
Environmental flow recommendations are recommendations for specific flows at specific times for specific ecological purposes. Not all environmental flow recommendations can be achieved at this time. The adaptive management program includes a monitoring plan that evaluates both physical and biological benefits of the flow releases.

Initial efforts in the Willamette have focused on the Middle Fork Willamette and McKenzie Rivers. On the Middle Fork Willamette, environmental flow recommendations have been identified, initial environmental flow releases have been implemented, and a monitoring plan has been implemented to evaluate the physical and biological benefits of the flow releases. Environmental flow recommendations have been identified for the McKenzie River, but have not yet been implemented. A monitoring program for the McKenzie River is being developed.

The next step for the Willamette River Sustainable Rivers Project is to develop environmental flow recommendations for the North and South Santiam rivers. The USACE and TNC are working with the U.S. Geological Survey to complete a hydrologic analysis of the North and South Santiam Rivers and to summarize ecological and physical information about the rivers. This information, and input from technical experts, will inform development of the environmental flow recommendations. Once completed, the environmental flow recommendations will be incorporated into a USACE model for reservoir management to see how the environmental flows can be reconciled with other authorized reservoir uses.

Discussion:

- USACE staff said the USACE would like to hold a summer workshop in the Santiam regarding flow recommendations as part of their outreach efforts.
- In response to a question, the USACE said environmental flow recommendations would be based on existing (not new) research and monitoring information.
- A question was asked about how ecological flows would affect the Detroit Reservoir rule curve. USACE staff responded that the USACE must follow the rule curve or obtain specific authorization to change the rule curve. The USACE gave an example from another watershed where ecological flows were implemented within the limits of the rule curve. The USACE is not anticipating any dramatic change in the Santiam.
- A question was asked about whether The Nature Conservancy and the USACE intended to involve groups like the Summit participants in this process. Leslie Bach replied that the intent was to work with a broad group of scientists to understand the ecology, and to work with the USACE's existing Flow Management Group. It was suggested that it can be

valuable to have technical and policy people meet together.

- USACE staff commented that all USACE work would be vetted, reviewed and commented on. The USACE is being very transparent with the work they are doing on the Willamette Project BiOp.
- The USGS flow report on the Santiam Rivers will be out in a couple of months.

EMERGENCY MANAGEMENT PLANNING

Patricia Farrell, City of Salem, presented information on a comparison ("crosswalk") of multiple Emergency Management Plans in the basin. A template was created to investigate and compile information on the emergency management plans of eight agencies with emergency management responsibilities in the North Santiam Basin: City of Salem, Linn County, Marion County, Oregon Department of Environmental Quality, Oregon Emergency Management, US Army Corps of Engineers, Environmental Protection Agency Region 10, and United States Geological Survey. The template was used to gather information on how agencies addressed planning, response, recovery and mitigation for the following categories of emergencies:

1. A general category that encompasses 'all events'
2. Infrastructure Failures
3. Flood Events
4. Hazardous Material Incidents
5. Drought Events

Based on the information in the templates, a "crosswalk" comparing the eight emergency management plans was created to look for commonalities, gaps, and opportunities.

An Emergency Management Planning (EMP) Work Group meeting was held on February 27th. (See Handout J Emergency Plan Crosswalk Group Meeting Summary). The EMP work group reviewed the crosswalk and made recommendations for future actions. Don Pettit, DEQ, gave a presentation to the EMP work group on DEQ's Incident Response Information System (IRIS) GIS tool.

Based on the EMP work group's discussion, Handout K, Preliminary Recommendations for an Emergency Management Planning Action Plan was created. These preliminary recommendations are organized in three categories: Organizational Structure/Governance; Planning; Communication and Coordination. Patricia Farrell reviewed these preliminary recommendations with the group and asked for their feedback.

Discussion on Handout K, Preliminary Recommendations for an Emergency Management Planning Action Plan

Organizational Structure/Governance

Given: Define the overall purpose of an organizational structure for basin-wide emergency response:

- Recommendation: Ongoing workgroup that meets quarterly to implement the actions listed below under Planning, Communication and Training.
- Long term: Consider forming a Local Emergency Planning Committees (LEPC).

Discussion:

- There is a push in Oregon to form more LEPC's. LEPC's are generally formed on a county or multi-county basis, not a watershed basis. Linn and Benton Counties have a combined LEPC. There is no LEPC in Marion County.
- LEPC's have to meet certain responsibilities, and are focused on hazardous material spills. However, one advantage is that funding for LEPC's is available.
- The group discussed developing a geographic response plan (GRP) as an alternative to forming a LEPC.
  - GRPs can be prepared at a watershed scale. DEQ would like to prepare a Willamette Basin or an I-5 GRP, but has not been able to find funding.
  - Of the 10 GRPs in Oregon, most focus only on oil spills. Only the Deschutes GRP and the McKenzie River GRP focus on all hazardous material spills.
  - The McKenzie River GRP is a state-of-the art, watershed GRP prepared by the Eugene Water and Electric Board (EWEB) using Homeland Security funds. Homeland Security funding is limited and competitive at this point. It would be difficult to find money to prepare a GRP with the same level of detail for the North Santiam.
  - GRPs are high-detail and high maintenance. Information on GRPs can be found at http://www.rrt10nwac.com/
  - Rather than having one plan dealing with all types of emergencies, it may be better for the EMP work group to focus on a separate GPR plan for hazardous materials. The EMP work group could help tie the GRP into existing County emergency management plans, and could work through County emergency management plans to address other types of emergencies.

Planning

- Recommendation: Engage USACE to obtain the most recent Emergency Action Plan, updated notification flow charts, and 2012 scheduled readiness activities with local jurisdictions for Detroit/Big Cliff Reservoirs.

- Recommendation: Work with DEQ to develop and insert inventory, critical infrastructure, and information into GIS and a mapping system

Discussion:

- When developing a GIS and mapping system, it is important to consider the availability of money and personnel to establish and maintain the system.
- Adding additional information to an existing system may be the best option. Examples of existing systems:
  - DEQ's Incident Response Information System (IRIS). This system can work on a laptop in areas where there is no Internet connection. IRIS does not support real time spatial analysis tools.

        - Dan Brown (City of Salem) created a product using Esri's GIS mapping software that includes DEQ's data.
    - Information that would be useful to include in a GIS system includes
        - The location of all flood gauges in the watershed.
        - Information on cell phone carriers that operate in different areas.
        - The location of chemical storage sites in the watershed. The agricultural industry needs to be involved in identifying these sites.
    - Oregon does not have a centralized location for data that would be useful during an emergency response. The systems used by different agencies are inoperable, which makes it difficult to find and share information during emergencies. The group discussed ongoing efforts to address this problem:
        - The Department of Administrative Services (DAS) is developing RAPTOR (Rapid Assessment Planning Tool for Oregon). RAPTOR will contain its own data and will be able to access other data sources. It was suggested that Sean McSpaden, who is coordinating this effort, be invited to a future work session, and that the group consider providing a letter of support for RAPTOR.
        - Oregon has GIS Framework Implementation Teams (FIT). A Preparedness FIT led by Don Pettit is pulling together existing databases and identifying and attempting to fill data gaps.
    - The group talked about "lessons learned" during the January 2012 floods:
        - It was difficult to find flood-related information on the Internet. The City of Salem's webpage now has an "Emergency" link to flood related information (i.e., sandbag locations, gauging stations).
        - Flood mapping data from FEMA was not readily available.
        - The process for communicating with the public was slow. For example, it took a long time to get approval for notices to the public to move hazardous material out of the floodplain. "Canned" messages need to be developed.
        - An ability to forecast the extent of flooding would have saved Oregon millions of dollars.

- Recommendation: Consider and assess potential funding sources and programs.

  <u>Discussion:</u>
    - The Oregon Health Department or EPA might be potential funding sources.

- Recommendation: Develop mitigation and recovery plans – including areas that have the least focus and areas that should be considered for a longer term effort.

  <u>Discussion:</u>

- There needs to be more focus on prevention. For example, developing pre-approved notification to remove stored chemicals from a floodplain when a flood is coming.

Communication and Coordination

- Recommendation:
  - Clarify existing formal and informal communication protocols and identify communication gaps. Especially focus on understanding and documenting informal communications systems, which are relied on heavily in an emergency.
  - Improve understanding of the Oregon Emergency Response System (OERS) and recommend changes
  - Improve 9-1-1 coordination
  - Compile and expand call down lists

  Discussion:
  - The importance of informal communication, networking and building relationships was emphasized.
    - Robert Chandler commented on the importance of meetings like the Summit to develop informal relationships that can be extremely important during an emergency event. For example, a car recently ended up in the Santiam River. Because the Santiam River is the boundary between Marion and Linn Counties, there was uncertainty about who was responsible for removing the car. Informal relationships (knowing people and knowing the right people to call) got the car removed from the river.
  - An existing system provided almost real-time notification about a Mill City bank robbery. This may be a system to tie into for emergency response.
  - Idaho has an effective notification system that uses WebEOC software to notify responders about emergency events and set up conference calls for emergency event briefings. Perhaps something like this could be implemented in the North Santiam watershed.
  - OERS should be informed if there are problems with OERS notification.

Training

- EPA boom training
- *Long Term* - Work towards a basin-wide "table top" exercise 1 to 2 years out
- *Long Term* - Consider training through the Emergency Management Institute, possibly having the Emmitsburg type training delivered to us.

  Discussion:

- Dan Heister, EPA, mentioned that funding for EPA boom training is limited. Priority is given to groups with their own booms. He offered to work with Patricia Farrell to identify available booms in the watershed.
- Training through FEMA's Emergency Management Institute (EMI) must be coordinated through Oregon Emergency Management (OEM). There is a waiting list for jurisdiction-specific training. OEM also offers some free training. Kelly Jo Craigmiles is the OEM training contact.
- The USACE conducts some internal tabletop training, but lacks authority to fund or provide training outside of the USACE. The USACE could participate in a broader scale tabletop exercise, but could not lead the exercise.
- The Association of State Dam Safety Officials (ASDSO) offers some training.

Additional Discussion

The group discussed the importance of connecting the work of the Research and Monitoring Work Group and the EMP Work Group. The Research and Monitoring workgroup could identify research and monitoring information that would be helpful during an emergency response. The Research and Monitoring Work Group could also help identify the "triggers" for an emergency event. For example, what will the extent of flooding be at certain river levels? (The City of Salem has some of this information). An annual Summit would be one way to keep these two work groups connected.

Group Recommendations

- The group agreed that Handout K, Preliminary Recommendations for an Emergency Management Planning Action Plan, with the additions discussed at the meeting today, provided a good template for moving forward.

NEXT STEPS

- Triangle Associates and Oregon Consensus will amend Handout G, Research and Monitoring Work Group Recommendations and Handout K, Preliminary Recommendations for an Emergency Management Planning Action Plan, to reflect today's discussion and send it back out to the group.
- The Emergency Management Planning and Research and Monitoring Work Groups will meet quarterly to further define goals and explore ways to connect research and monitoring information to emergency planning.
- USACE staff offered to share information about the USACE tabletop exercises with the group, and offered to share information about the USACE Emergency Action Plan, flood inundation maps, and call-down lists with the local Emergency Managers.
- Pursue EPA boom training by finding out what booms are available in the watershed and assessing the interest of the smaller jurisdictions in participating in boom training.
- There was unanimous agreement that holding another Summit next year would be valuable. Suggestions for topics to discuss at the next Summit:
    - Ask Karl Morgenstern to speak about the GRP for the McKenzie River Watershed.

- Continue discussion about a data portal (should the information be in one location, or connected through links).
- Provide information (perhaps *t*hrough a poster session) about specific projects or research in the North Santiam Watershed. Consider inviting OSU to attend.
- Ask the USACE to talk about their Emergency Action Plan and flood inundation maps
- Share information about progress made by the Research and Monitoring and Emergency Planning Work Groups

CLOSING COMMENTS

Robert Chandler thanked participants for attending the Summit. He mentioned that we all work in an environment with multiple needs, insufficient funding, and heavy consequences in the event of failure. This increases the need for face-to-face meetings like this to promote communication and coordination. He said that he views the Summit as an investment in collaboration, and hopes that this investment will lead to other resources to support future quarterly and annual meetings.