

May 19, 2014

MEMORANDUM

To: Patricia Farrell, City of Salem

From: Bea Covington and Gretchen Greene, ENVIRON

Subject: **North Santiam Watershed Summit 2014 Meeting Notes**

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The 2014 North Santiam Watershed Summit was held April 18 and was attended by 32 individuals. These notes include an overview of the event, brief summaries of the presentations that were given, the results of the afternoon exercise to identify desired requirements for the North Santiam emergency watershed system, next steps, and a list of attendees.

### ***Overview and Summary***

Patricia Farrell of the City of Salem opened the event with a historical overview of the previous three events. Her presentation was followed by four in depth “information transfer” presentations.

1. Erik Petersen, United States Army Corp of Engineers (USACE) gave a presentation on the state and use of Dam Failure Inundation Maps and their use as risk mitigation and response planning tools;
2. Glen Hess, United States Geological Survey (USGS) presented on the Silver Jackets Hazard Coordination Group, their roles and capabilities, their efforts at coordination and collaboration and their work on the development of an updated, and more current understanding of flood reporting concepts;
3. Ryan Cahill, USACE presented the Rapid Assessment of Flooding Tool (RAFT) that is being developed by Silver Jackets for use by County Emergency Managers and others to assist in the characterization and reporting of flood events as well as scenario development and planning for future response. and
4. Gretchen Greene, ENVIRON International Corporation (ENVIRON) provided an overview of the results of the Spill Response Survey.

The final two events of the day, coordinated by Tyler Bax and Kerry Halligan, Mason Bruce & Girard (MB&G), were an interactive presentation and an exercise designed to set the stage for the development of a GIS mapping tool similar to the one developed by EWEB for use in the McKenzie Watershed.

The Summit concluded with a brainstorming exercise to identify and prioritize “next steps”. There was a clear desire on the part of participants to develop and execute a “briefing level” exercise to inform and refine the development of the GIS mapping tool, as well as coordination of the efforts of this group with activities that may be going on in other sectors (e.g. RAFT, RAPTOR, IRIS). There was agreement that, while the development of an EWEB tool would benefit from the results of this type of exercise/coordination, the two events could, and should occur concurrently.

As a result of the meeting, the group recommended having a follow-up event that would help capture the current coordination protocols during a spill response. Information on this proposed exercise is described starting on page 10 of these notes, and summit participants are encouraged to contact Patricia Farrell for more information about this meeting.

## ***Presentations***

Detailed notes on the elements of each presentation follow.

### **First Presentation: Summit Background**

Patricia Farrell, Natural Resource Specialist, City of Salem Public Works Department.

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### ***Overview/ Watershed Importance***

The North Santiam Watershed Collaborative Planning initiative started in 2009. The watershed is the dividing line between Marion and Linn County. The watershed is important for many reasons including, drinking water, irrigation, recreation, habitat for several ESA listed species, agriculture, USACE dams, 2 smaller dams and national forests. There are a lot of different things going on in the watershed. The Summit started in 2009 with a round of Oregon Consensus confidential interviews with stakeholders to discuss stakeholder needs-communication, data management, emergency planning, infrastructure failure, flooding, drought, etc.

### ***2011 Summit (1st Summit)***

The Summit focused on emergencies, different kinds, types, threshold, data management, and public engagement/involvement. The attendees of the Summit split into two groups; the research & monitoring group and the emergency planning group. Both groups identified a linking theme in the Summit; the need for a GIS data management/ mapping system for emergency response.

### ***2012 Summit (2nd Summit)***

Two separate workgroup meetings preceded the Summit. The research and monitoring group focused on mapping of monitoring, where and how, etc. The emergency planning group focused on stages of planning, recovering and mitigation was not addressed. The jurisdictional response from this summit focused on different types of mapping-IRIS, hazard mapping, EPA geographic response, EWEB, etc.

### ***2013 Summit (3rd Summit)***

This Summit focused on capabilities of ESRI system, visioning for years 1-5 for primary emergencies and 4 stages of emergencies, what vision will be, and how to achieve the vision and goals. There was strong interest in exploring a web-based emergency response system similar to the EWEB model.

***Update:*** Since the last Summit the following progress has been made; coordination with Karl Morgenstern from EWEB, hired Mason, Bruce, & Girard to explore an interactive mapping system, conducted online spill response survey, (the survey was designed to evaluate jurisdiction, coordination, sharing, communication, GIS system interest, etc.), and coordination with METCOM-911.

### **Second Presentation: Dam Failure Inundation Maps**

Erik Petersen, Operations Project Manager, Willamette Valley Project, USACE Portland District.

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North Santiam Summit #4 2014

## ***Dam Inundation Mapping***

The primary purpose of the Corps dams is to provide-flood risk management. The biggest concerns for this group are the Detroit and Big Cliff Dams. The maps shown were dam failure inundation mapping not flood risk mapping, and what would happen if the dams failed (which is a low probability- high consequence event).

All of the maps have been updated in the past few years. In response to the question “Why aren’t the maps available online?” This presentation has been shown to other groups. But the maps and presentation are not available to the public. Data is tight and smart. Maps could be used to cause harm, so they aren’t available, and we legally can’t do it as mandated by Dept. of Homeland Security (sensitive info for Dept. viewing only) regulations and for practical reasons.

## ***Willamette Valley Project Example***

There are 13 dams in the Willamette Valley Project area. The project has many benefits; recreation, water quality, habitats, dam inundation, etc. The risks in the current system include aging infrastructure (mechanical and electrical components are aging), change in risk perception, seismic and flood potential.

Dam maps are multi layered and make assumptions about conditions that may exist at the time of failure (e.g. sunny day failure- full reservoir pools, act of god, (green failure), Noah arcs flood event-over topping of structure, and uncontrolled flow (red failure). Purpose of maps is to provide information (data, maps, and plans) to USACE and local municipalities so they can prepare and protect themselves for dam failure.

Examples of dam failures in region, Fern Hill dam-internal piping problems, received funding to replace drain and earth and embankment infrastructure. Fern Hill was built on sand/silt. Others built on rock and modern dams generally hold up in seismic tests. ).

## ***Reading maps***

Mr. Petersen had examples of several maps from the region. He distributed them and provided a quick overview of how they are set up and read and how they are used by emergency planners.

Map Legend: Green(“sunny day” event), Red (“rainy day” event), arrival time, to reference mile (stream reference miles), different boundary designations, roads, critical infrastructure (dams-USACE, non-USACE, fire stations, schools, airport, police, power and water facilities), emergency response, communication facilities, etc. The maps also include wave arrival times, arrival elevation, peak time, and peak elevation, Maps show consequences of extreme failure, extremely unlikely, difference of magnitude, attention to seismic activity, fern ridge dam has the most seismic risk-due to sand foundation, and consequences are small due to volume

The USACE is currently conducting a screening of seismic preparedness of dams, current status, EAP plan in case of post-earthquake emergency response (inspections, procedures, notification)

There was a substantive discussion regarding the release and public sharing of documents like this. The question was asked: “Do we want to release risk maps?” Points to consider included insurance pros/cons, real-estate cons for property values, risk, etc. data locked down because of ownership issues, and Department of Homeland Security (DHS) (security

issues), and data maps are protected by DHS. There are security risks to consider in terms of information that could be used to cause considerable harm.

Some expressed a “right to know” regarding flood risk/storm water management information. Mr. Petersen pointed out that the dam inundation maps can be used by Emergency Management professionals to create for flood risk/ storm water management maps and information that could be shared with the public.

The question was raised as to “Does the game change when a catastrophic event happens?”; “Is there a system in place to release the data in the case of such an event?” Again, this information can be used by Emergency Response planners to inform the development and management of notification trees and other tools to manage response. GIS system could be used for notification (when, what, and how).

Climate change is a game changer with map creation. Landslide maps (DOGAMI) looked at upstream, but not downstream. Flows could be modified to diminish impacts to downstream to manage the event. This event hasn’t been looked into and tested.

### **Third Presentation: Oregon Silver Jackets;**

Glen Hess, Surface Water Specialist, USGS Portland Office.

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#### ***Who are The Silver Jackets?***

A national organization that occurs in most states in the country. Flood Mitigation Subcommittee to the State Interagency Hazard Mitigation Team. Coordinated interagency effort, many agencies involved (mostly federal and state). They have been in Oregon for 2-3 years. Name came from when there would be a flood. FEMA-blue jackets and USACE-red jackets. Silver jackets=unification.

#### ***Roles***

Understand agency missions and funding in case of major emergencies. Get together as a group after a hazardous situation. Know what each group has and how they can share. Efficiencies and collaboration based on data sharing opportunities.

#### ***Data sharing***

Some data sharing has already been completed. 2012 Turner flood- collected high water marks that were used to create combined data. However, the recent floods (Turner, Marion, and Albany) were local in nature and not widespread. So there is a plan on shelf for big flood event and what each agency can do. Perishable data plan for use after future flood events. Tied well to OEM Hazard Mitigation Plans (funding mechanism).

Current efforts are focused on priority areas to manage flood risk (FEMA mapping, Flood Inundation mapping) and to create a unified statement as to where the flood occurred and the magnitude of the flood. Information is important for reporting and to ask for a presidential emergency declaration. The FEMA tool is not available to the public, but is available to other agencies. Silver jackets have tried to come up with a magnitude rating and a consistent method to determine flood level. Have tools and processes that will help determine the magnitude of the flood.

Other tool: Wild land fire flood response, RAFT (Rapid Assessment of Flooding Tool), Emergency manager tool.

### **Third Presentation: Rapid Assessment of Flooding (RAFT) Tool**

Ryan Cahill, Hydraulic Engineer, USACE Portland District.

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#### ***Why RAFT? What resources are available now to characterize floods?***

USGS River Watch website has information on peak flows, water watch (ranked by percentile), compared to other historical records for that day in prior years. NOAA River forecast center (observed data, stream flow forecast, flood thresholds, impacts based on some gauges, but not all, no ability to tweak data). 80 forecast points. However there are holes in these data sources including the following:

- Local gages not captured (e.g. Salem)
- How rare is the event (frequency)?
- What levees are in danger?
- How much damage may occur?

Nice to tie the river forecast points to levee points (to gage if they are close to overtopping). Maps that include flood frequency curves that can show how rare an event is and return period vs. annual exceedence probability. Effort to move away from the 100 year event mentality, so people will know that an event can happen more frequently.

#### ***Goal of RAFT- have agencies on the same page to apply for disaster aid***

Real time tool, consolidate data from agencies, output (informative-flood frequency, practical-levee freeboard). RAFT is a Silver jacket pilot project. Real-time inputs and raft database are fed into system for analysis and produce outputs.

#### ***Outputs:***

GIS, gages color coded by frequency, levees color coded by freeboard, HUCs (Hydrologic Unit Code) color coded by frequency. Breakdown by watershed to smaller watershed: basin to sub basin and lastly to watershed. Outputs cont. 8 gages in North Santiam, 8 levees for USACE, poor data quality in North Santiam. There is an ability to run historic events as well as potential. Frequency curves from different agencies are superseded. How to correlate gage stage to levees? Use previously established flood studies (flood insurance studies, USACE studies, USGS, etc.) Automated retrieval: flood forecasts from RFC, observed data from USGS (or others), historic events, and ability to manually modify. Oregon RAPTOR- all things emergency response related.

#### ***Who can use RAFT?***

FEMA, USGS, NWRFC (Northwest River Forecast Center), intended to be used by County Emergency Managers to create forecasts and compare to historic events.

#### ***Current Status:***

Under development, little QC, target release July 2014, additional features-County EMS will give feedback, Automate output to NWP eGIS, Oregon RAPTOR (Real time assessment and planning tool for Oregon), expanded to other states. RAFT is currently a MS Excel/ Access tool which could be tied to FEMA HAZUS.

#### ***FEMA HAZUS (Earthquake, wind, and flood):***

Flood inundation mapping (FIM) real time maps based on USGS gaging station and NWS real time forecast data. FIM includes depth grids and allows emergency managers to look at what if scenarios. Tied to gage and forecast data, depth grids. HAZUS provides a rough estimate of results, with better and worse results depending on your location.

### **Potential uses:**

Public awareness of flood risk, Johnson Creek Flood Inundation Map (FIM) is coming on line. Can the data be tied to locally based LiDAR? What are the effects of dredging on river channel data? Based on 2006 LiDAR and surveying from 2006-2011 surveying and flood insurance study (which is ongoing). Want to choose good sites that have good data sources.

### **Fourth Presentation: Survey Analysis for North Santiam Spill Response Survey**

Gretchen Greene, Environmental Economist, ENVIRON.

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Covered survey summary (refer to survey summary analysis for specifics).

The North Santiam Watershed Council, the City of Salem, and Marion County developed a survey to understand the roles, responsibilities, and level of preparedness within the multiple agencies or organizations that are involved in spill response. This information will be used to begin a dialogue about increased coordination, equipment availability and sharing, training, and understanding each other's roles and responsibilities in the event of a spill or contamination of the North Santiam River. The results of the survey were presented at the North Santiam Watershed Summit on April 18, 2014.

We received 26 responses from 19 different agencies or organizations (Salem Hospital, Marion County, Gates Regional Fire Police District, Jefferson Fire District, Stayton Fire District, City of Salem, USACE, Oregon Department of Environmental Quality, Oregon Department of Transportation, Oregon Water Resources Department, USGS, US Forest Service, City of Gates, Santiam Water Control District, Bureau of Land Management, Norpac Foods, City of Stayton, and the Oregon Department of Forestry).

### **Survey Overview**

- Agency/Organizational Roles were covered in Question 1-6.
- Spill Response Responsibilities were covered in Question 7-8.
- Levels of Preparedness in case of a spill were covered in Question 9-16.

### **Key Findings**

- 56% of respondents have responsibility to spills in the North Santiam.
- 45% of respondents have jurisdiction to respond to spills in Marion County.
- 60% of respondents have Awareness Level Emergency Response Training.
- 56% of respondents have On Scene Incident Command Training.
- 52% of respondents have Operations Level Emergency Response Training.
- 65% of respondents have an emergency or spill response plan and can provide a copy.
- 50% of respondents may have interest in participating in a North Santiam Spill Response Team.
- 44% of respondents would consider loaning equipment or resources in the event of a spill.
- 45% of respondents have an updated inventory of spill response equipment/resources and could share the information.
- 52% of respondents would loans equipment or respond to an incident if proper agreements were in place.
- 60% of respondents are prepared for minor oil spills and spills on land.
- 48% of respondents are prepared for minor chemical spills and spills on water.
- 68% of respondents are notified by 911 Dispatch in the event of a spill.
- 88% of respondents use cell phones and 72% use land lines to communicate.

- 52% of respondents have communication limitations.
- 48% of respondents would consider a mobile emergency response system to be somewhat valuable.

### **Fifth Presentation: North Santiam Watershed Emergency Response System**

Tyler Bax, Geospatial Analyst and Kerry Halligan, Senior Geospatial Specialist, Mason, Bruce, and Girard (MB & G).

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Kerry Halligan: Email: [khalligan@masonbruce.com](mailto:khalligan@masonbruce.com) Phone: (503) 224-3445

#### ***Data and functional requirements***

The goal of the presentation and discussion is to gather and document user requirements and needs/wants for NSWERS (North Santiam Watershed Emergency Response System).

Initial requirements for the system are based on MWERS (McKenzie Watershed Emergency response System). Some of these requirements include: watershed wide, ability to enter location of spill and flow regimes on map and the ability to zoom to and get specific response plans for impacted areas of river, ability to provide inventory of equipment that's available, resources, communication, etc. Eugene Water and Electric Boards (EWEB) are in the process of transferring the MWERS to the web.

Five categories of requirements: data, analysis, field, communications, and reporting.

Four stages of emergency response: response, recovery, mitigation, and preparedness.

Technology considerations at this point include a web map hosted on ArcGIS online. RAPTOR, IRIS systems are also using ArcGIS online, thus it would provide a common platform to integrate with these existing data sources. The requirements gathering discussion will focus on functionality first and data second.

#### ***Examples of functionality that are currently available include:***

Mitigation and Monitoring Reporting System - ODOT System for monitoring replanting along roads. System maintains and photos, monitoring reports, documents, and also handles reporting efforts. Also generates reports that are ready to be delivered to the agency. System provides a method to input data into a template for report creation and effective communication of project status over long timelines (recovery and mitigation).

Northwest Forest Management, App. - inspections, mobile device used for site inspections (fire prevention, etc.) Input several predefined fields and upload data to the system. Color coded by inspection success/failure. Also triggers an event for email notification. Integration with mobile, reporting, data collection.

#### ***Requirements Gathered Thus Far (what we think we know)***

Incident location, response equipment, gage data, spill travel time, project and response expertise search capability, population calculations (radius rings to calculate interest), tax lot info/ property ownership, residence identification, weather forecasts, sunset/sunrise time, flood stage overlay, cellular coverage data, WQ info, etc.

Communication requirements- call down lists, reverse 911, text notifications, email notifications, and incident codes consistent across users.

Field requirements- access to system from any browser, access from mobile devices, and support upload of observations from field (points, photos, and text).

Reporting requirements- access to specific response strategy reports, creation of reports, and support creation and display of emergency maps.

Specific data requirements of system to be determined.

### ***Desired Requirements for the North Santiam System***

After the last presentation, Tyler Bax and Kerry Halligan led a brainstorming session on the analysis requirements that might be important for a North Santiam spill response tool. After the brainstorming session, participants were given sticker 'dots' to be used to 'vote' for the items on the list that they felt were the most important. Results from this exercise are provided below.

#### **Analysis requirements:**

- Population density data-determine population effected-density map.
- 24hr precipitation, wind, temperature forecast
- Access to RAFT AND FIM.
- Land spill-time of travel
- Prioritize event emergency/non-emergency. Ranks the response based on the plans.
- Response level clarification
- Initial default level response, starts as an emergency and then can be reclassified, include severity. Tiered response system. Priority 1-4.
- Relevance interest area selection (how event will impact specific areas)
- GIS based emergency response notification.
- User selection- with a menu, scenario based, Need to know vs. like to know.
- Incidents need to include size, amount, location, stream flow, etc. (minimum. road mile, river mile could also be included.
- Real time evacuation route calculation.
- Aggregate all water gage information across agencies.
- Datasets for a particular zone based on certain parameters.
- Life cycle of an event, when do you start, who starts it, and where. Who knows what-911, others. How does it start? Track communication and history of individual response. Early history, level of detail. Ability to update incident information. Info. ASAP, escalate as needed. Track update, integrate, individual response.

#### **Communication Requirements:**

- Communicate public health risks from spill to relevant parties-irrigators, water suppliers/users, risks from a spill.
- Early warning notification: notify other parties outside of jurisdiction after a spill.
- Notification of large water diversions on/off
- Integrate systems.
- Real time data feeds-general and user selectable.
- Geo shape notification, IPAWS integration
- Coverage layers (cellphone, radio, etc.)
- Interagency communication systems (inter-operability)
- Coordinated communication system (one responsible agency). OERS is supposed to be that.
- Road message notification system updates integration.
- Include other parties in notification (FWS, others)



### **Prioritization - After voting exercise (top picks)**

- Calculation of spill time
- Default status and refined over time
- Historical perspective
- Real time data feeds- user opt in/out
- Interagency/ inter operable communication system
- Consolidated location of map data.

### ***Next Steps***

Bea Covington from ENVIRON led a discussion of the next steps for the group. The initial effort was a brainstorming effort which produced the following notes.

1. Key next steps- understanding processes, workflow, lifecycle
2. Clarify needs and wants.
3. Document how it's supposed to work now.\*
4. One system to plug into. De-conflicting different organizational mandates.
5. Choose method of implementation
6. Cost analysis
7. Governance
8. Management
9. Share tangible product (report) and recommendations.
10. Important new data sources are coming online all the time. Hard to include and determine what's available.
11. Data sharing committee? A process already exists.
12. Coordination across agencies. Ongoing efforts, track these efforts.
13. National hydro dataset needs help, data quality needs.
14. Reconcile nomenclature.
15. Share information with other working groups. Unified approach to emergency response.

### **Discussion Regarding Follow Up Meeting**

As a result primarily of the need to document #3 above, "how it is supposed to work now," the discussion focused on having another meeting of perhaps a smaller group of participants run a briefing-level exercise to:

1. Setup another meeting to discuss what we each do and understand roles and who else should be at the table. Agreed to discuss future meeting in June and have the meeting during early Fall 2014.

- Coordinate to get live data.
  - Literature review, database review.
2. Run a live scenario of possible spill response. Where are the gaps?
    - Who's missing? First responders from each of the public safety disciplines including medical response, OERS.
    - Who does what (OER's, DEQ, City, ODOT, Police, Fire, Medical, Public Health, Linn & Marion County, EPA, etc).
    - Sketch processes and flows and run a gap analysis
  3. Run work group activity before MB&G runs their analysis.
  4. Potentially diagram responsibilities to determine workflow

During the "next steps" discussion several issues or themes were identified. These were:

- Identification/confirmation of the existence, or current development of tools and resources (at either the state or potentially federal? level) that might overlap with the Summit goal to develop an EWEB type system;
- The desire not to duplicate or replicate existing efforts;
- A recognition that "until we know what right is supposed to look like- and where/ how it does not, we won't really know what we need out of an "EWEB" type system;
- It would be a shame to spend time/financial resources developing something that was either being developed elsewhere, or did not "answer the mail" for our needs.....

### **Recommendations from ENVIRON**

There was a strong desire, and a significant level of enthusiasm for running a follow on exercise (at a briefing level) to address these issues and provide input and feedback to the development of an EWEB type system. The primary goal of the exercise would be

- To identify gaps in information and information flow that hinder response,
- To identify existing resources and efforts that can be applied to close those gaps
- To inform and refine the development of an "EWEB" system to complement and enhance existing tools and efforts.

In response to items 14, 15 and 16 from above the following sequence of activities or "next steps" are proposed:

1. Engage key stakeholders to identify potential scenarios for use in a "briefing level" exercise;
2. Select (or develop if one does not exist) a multi- faceted scenario that will exercise all agencies and elements for a typical hazmat scenario.
3. Invite representatives from key agency and first responder constituencies to participate in a four phased briefing level exercise. Attendees should be well versed in the various policies, procedures and capabilities of their representative agency (or group of agencies) and should be able to critically evaluate participation and identify points of failure, and are possibly the same group that are contacted for step one.
4. Run Exercise and Follow Up

- Phase One- run the exercise - ~ 3 hours participant time
- Phase Two- initial evaluation of exercise ~2 hours participant time
- Phase Three- inter/intra agency cross check- ~ 10 days participant time (mainly to give enough time, not that 10 days are required to execute)- participants will have time to return their respective agencies (or groups of agencies) to review identified gaps and points of failure, to confirm and prioritize findings and to identify proposed points and methods of intervention.
- Phase 4- synthesis and recommendations- participant feedback will be synthesized and incorporated into a recommendation report. The report will communicate identified gaps and points of failure, and will identify tools, techniques and resources to address those points. Identified responses will include existing databases, agency resources AND highlight areas where an “EWEB” type tool can both fill gaps and facilitate better, more efficient use of existing resources (through linkages, drop downs, and other forms of connectivity).

## **4<sup>th</sup> Summit Meeting Attendees**

1. Les Bachelor, USDA NRCS (1<sup>st</sup> Summit)
2. Tyler Bax, Mason, Bruce, Girard (1<sup>st</sup> Summit)
3. Dan Brown, City of Salem (1<sup>st</sup> Summit)
4. Ryan Cahill, USACE (1<sup>st</sup> Summit)
5. Robert Chandler, City of Salem (4<sup>th</sup> Summit)
6. Bea Covington, ENVIRON (1<sup>st</sup> Summit)
7. Maitri Dirmeyer, ENVIRON (1<sup>st</sup> Summit)
8. Greg EK-Collins, ODOT (4<sup>th</sup> Summit)
9. Patricia Farrell, City of Salem (4<sup>th</sup> Summit)
10. Katie Gauthier, Senator Merkley's Office (1<sup>st</sup> Summit)
11. Reed Godfrey, City of Salem Fire/Regional Hazmat (1<sup>st</sup> Summit)
12. Mike Gotterba, City of Salem (4<sup>th</sup> Summit)
13. Gretchen Greene, ENVIRON (1<sup>st</sup> Summit)
14. Kerry Halligan, Mason, Bruce, & Girard (1<sup>st</sup> Summit)
15. Karen Hans, ODFW (4<sup>th</sup> Summit)
16. Glen Hess, USGS (4<sup>th</sup> Summit)
17. John Kimbough, Guest (1<sup>st</sup> Summit)
18. Dave Kinney, City of Stayton (3<sup>rd</sup> Summit)
19. Chuck Knoll, Public Works, Linn County (1<sup>st</sup> Summit)
20. Chris Kowitz, City of Salem (1<sup>st</sup> Summit)
21. Joe Larsen, Linn County Sheriff (2<sup>nd</sup> Summit)
22. Steve Lucker, Oregon Dept. of Land Conservation and Development (2<sup>nd</sup> Summit)
23. Rebecca McCoun-Travers, N.Santiam Watershed Council (1<sup>st</sup> Summit)
24. Bernie Pearson, Marion County
25. Don Pettit, DEQ Emergency Response Program (4<sup>th</sup> Summit)
26. Erik Petersen, USACE (3<sup>rd</sup> Summit)
27. Brenda Sanchez, Marion SWCD (1<sup>st</sup> Summit)
28. Tim Sherman, City of Salem (1<sup>st</sup> Summit)
29. Brent Stevenson, Santiam WCD (4<sup>th</sup> Summit)
30. Roger Stevenson, City of Salem (4<sup>th</sup> Summit)
31. Nancy Toth, EWEB (1<sup>st</sup> Summit),
32. John Vanderzanden, Marion County (4<sup>th</sup> Summit)