

Technical Group Members Present:

Jessi Belston	Port of Vancouver
Tonnie Cummings	WA Department of Ecology
Tom Gonzales	Clark County Health Dept.
Thom McConathy	Partnership Member
Marty McGinn	Clark County Health Department
Joy Polston-Barnes	WA Department of Natural Resources
Jeff Schnabel	Clark County Public Works
Ron Wierenga	Clark County Public Works

Additional Attendees:

Eldon Edwards	Felida Moorage
Jacquelin Edwards	Felida Moorage
Dan Matlock	Pacific Groundwater Group
Mike Riley	Papadopulos & Associates

Project Management Team:

Phil Trask	PC Trask & Associates, Inc.
Sabrina Litton	PC Trask & Associates, Inc.

Introductions

Ron Wierenga welcomed everyone and called the meeting to order. Introductions were made around the room and a brief overview of the agenda was provided. Ron said that the Corps is currently underway with a bathymetry study of Vancouver Lake.

Funding Discussion

Ron told the group that two grant applications submitted in fall 2007 to the Department of Ecology's Centennial Clean Water Program and the Freshwater Algae Program had been declined for funding. He told the group that despite this result, it was a good step forward towards obtaining future funding. Phil stated that a dialog needs to start developing with the funding programs so that they are aware of Vancouver Lake for the next funding cycle. He mentioned that he would be meeting with legislators next week in Olympia to make them aware of Vancouver Lake and its technical work needs.

Tonnie agreed that it was a good idea to work through legislators. Thom mentioned the need to push legislators with a credible plan and specific work items.

The list of Centennial Clean Water projects funded this round is currently open for comment. It was noted that no projects were awarded funding in southwest Washington. Not as many applications were submitted from that region, however, and it was unsure why this is. A discussion ensued about how the ranking system for this year's projects was different from previous years.

Question Matrix

Phil brought the group's attention to the latest draft of the Question Matrix. He mentioned that the Matrix had been through an ad-hoc committee refining process to get to this state and it was now time for the technical group to start working through the right hand columns. It is important for the Partnership to identify its technical priorities while also refining its social objectives.

The project manager asked the technical group how they would like to tackle this task. He suggested going through a couple of the questions to see how it felt and maybe after that, a strategy could be developed. Thom noted that some of the questions are worded poorly and that perhaps a narrative could be developed for each question. Phil acknowledged more work was needed and stated that while not every question stands alone, try not to get hung up on that fact because the matrix is meant to be a tool to develop a technical strategy rather than a final product. Right now the group should focus on the technical but allow a policy discussion to evolve concurrently with the Steering Group and Partnership.

Both Ron and Jeff had filled out their question matrix and were asked to lead the discussion. Ron began the discussion by stating that while he was filling out the matrix, it was not always a smooth process and at times it was necessary to push through it. He reminded the group that these were questions that had been asked by the Partnership and not through another agency. He said it's important to keep track of what you are thinking and any related studies that come to mind as you work through it so that you can look back on your thought process. Ron reviewed the first seven sediment quality questions and described his perspectives on information availability, relevance to scientific basis, and which questions he would link together for a potential technical study. Jeff went through some physical environment questions related to water circulation, timing, and flows. He saw these as important questions where there was low information availability.

Phil thanked Ron and Jeff for taking a stab at the matrix and sharing their thoughts on the process. Phil asked the broader group if they would be willing to commit to spending a technical group meeting in the near future on delving into the Questions Matrix. The group agreed this was important and it was decided that the group would address the matrix within the next two weeks on their own and plan on meeting again shortly after that when the project management team has compiled the responses.

Groundwater Presentation

Mike Riley from Papadopulos & Associates presented a PowerPoint presentation on the Vancouver Lake Lowlands Groundwater Model. The presentation provided an overview of the methods, modeling approach, and some of its initial results. Mike described that he is part of a greater technical team hired by the Port of Vancouver and Clark Public Utilities to create an encompassing groundwater model for the Vancouver Lake Lowlands. Other study team members include: Dan Matlock and Peter Schwartzman (Pacific Groundwater Group), Joel Massman (Keta Water, Inc.) and Rick Malin (Parametrix, Inc.).

Some of the team's first steps involved a transducer study using 20 wells throughout the lowlands (collecting data every 15 min), stage measurements in Vancouver Lake, and gage data from the Columbia River. The data were plotted against each other and regional water level trends could be observed. One important trend that was observed was that when Columbia River stage rises, it is followed by a rise in regional wells and a rise in Vancouver Lake, (which is driven primarily by the

flushing channel). This time lag between Columbia River level rise and well level rise is relatively short and ranges between minutes to 1.5 hours. This step was followed by steady state calibration and modeling using three models: MODFLOW (Groundwater flow model), Path3D (Particle tracking model), and PEST (parameter optimization program).

The study team's modeling approach involved determining the extent, thickness, and depth of aquifers, applying boundary conditions at model boundaries, attaining initial estimates of model parameters, followed by a sensitivity analysis and optimization of model parameters. A PowerPoint slide was shown depicting a cross section of geologic layers underlying the Vancouver Lake lowlands. From the top down, layers consisted of: a fine silt layer (specifically under Vancouver lake), a recent sand alluvium layer, the Pleistocene Alluvial aquifer, and the upper Troutdale gravel aquifer.

By comparing model results with real data, the team was able to calibrate the model and adjust parameters to achieve agreement between the two. After they were satisfied they went from modeling steady state conditions to modeling tidal influences in the system. They found the models to be fairly good representations of the system.

Mike Riley then outlined the path forward for the study team and groundwater model. It included continued application of the models in Port of Vancouver interim action planning and Clark Public Utilities wellfield development. The models will be updated based on new pump test and water level data as the systems come on line. Data and model changes will continuously be coordinated between Port of Vancouver and Clark Public Utilities.

An informal discussion and question/answer session continued after the presentation:

Does the model have the ability to calculate specific groundwater fluxes to the Vancouver Lake?

Yes, however, groundwater contributions to the lake are small relative to the flushing channel.

Is there a strong groundwater influence on Vancouver Lake?

From what is seen in the data, groundwater does not seem to be a large influence on an annual average scale. Sediments on the lake bottom are very fine and impede direct fluxes of water movement between groundwater and the lake.

Can the model be run using smaller time-steps?

Yes. While the study team looked at annual averages, the model can be broken up into seasonal or monthly time-steps.

How does groundwater flow into Vancouver Lake compare to that from Burnt Bridge Creek (BBC)?

Low flows from BBC into Vancouver Lake are probably greater than groundwater input. Annual average flows from BBC are around 20cfs (not including winter stormwater increases), while groundwater input is probably between 1-5cfs.

If the Partnership wanted to create a nutrient budget, is there groundwater chemistry data available?

Yes for some wells there is some chemistry data but to what extent is unknown.

Wrap-Up

Ron thanked the Port, CPU and the project team for their presentation and the technical group for attending.