**Oregon Solutions Team**

**Technical Advisory Committee (TAC)**

**Columbia River Levee Repair and Accreditation Project**

***Draft* Meeting Notes**

Oregon Solutions Project Website

<http://orsolutions.org/osproject/MCDD>

October 20, 2014 – Metro

**Meeting Objectives:**

The Oregon Solutions Team (OST) Management Committee (subsequently renamed the OST Steering Committee) requested the TAC address and provide recommendations on the following questions:

1.  Is the Cornforth Report technically sound?  (In other words, are the assumptions, methodology, and conclusions technically sound and dependable, given their charge of looking at how the system performs in a1-percent-annual-chance (100-year) flood event?)

2.  Do we have *enough* information on the railroad embankment to conclude at this time that it is not certifiable as a levee capable of protecting against a 1-percent-annual-chance flood in its present condition? (Note: we are not asking for a discussion of alternatives, but only if the Cornforth conclusion about the uncertifiable condition of the railroad embankment as a levee is warranted.)

3.  The OST Steering Committee plans to propose additional hydrologic modeling runs (@ approximately $15,000 per run) to the OST at the November 14 meeting for a 200-year flood (0.5%) and 500-year flood (0.2%) for comparison.  The questions for the TAC are:

* Are there any technical concerns or considerations we should be aware of in proposing these two additional model runs?
* Are there any *additional* hydrologic levels that should be modeled, including those related to the US Army Corps of Engineers (USACE) RIP requirements?

Additionally, the TAC deferred two items of old business for decision at today’s meeting:

1. Schedule a routine time for future TAC meetings.
2. Finalize and adopt the draft Operating Protocols discussed at the last meeting.

**Meeting / Discussion Summary**

Levee Engineering Assessments

* Mike Meyer from Cornforth Consultants and James Heyen from WEST Consultants were in attendance to answer questions about the findings and methodology of the Levee Engineering Assessments.
* TAC members posed questions regarding (1) the method of calculating levee risks / safety margins, (2) the suitability of levee scour protection, (3) the reason for assuming flooding of MCDD, a certified and accredited levee system, in modeling the risks to PEN 2 levees, and (4) a question regarding importation of text from the PEN 1 assessment into the report’s section on PEN 2. Responses:
  1. Cornforth used a deterministic approach to risk modeling, which is the standard practice for FEMA (as opposed to Monte Carlo probabilistic modeling techniques used elsewhere).
  2. Where levee armoring (rip rap) could be observed, scour protection was deemed adequate. More information may be needed for those areas where armoring could not be examined due to the presence of marinas or other facilities. It’s possible that the presence of docks or other structures, such as floating homes, could slow the flow of water near the levee, thus enhancing protection offered by the rip rap.
  3. FEMA requires each drainage district be modeled independently. To do this for the PEN 1 levees, the model had to assume PEN 2 flooded (and vice versa). However, FEMA has been asked the same question by MCDD staff and will prepare a response to the question.
  4. Text from the PEN 1 assessment was inadvertently copied into the PEN 2 assessment. Consequently, the TAC could not act on OST question # 1 until the correct report text was available. Mike promised to have that corrected. [***POST MEETING NOTE:*** *The correction was made by the following Wednesday, and the revised report posted to the Oregon Solutions Team web site at* [*http://orsolutions.org/osproject/MCDD*](http://orsolutions.org/osproject/MCDD)]*.* The TAC will revisit this question at its next meeting.
* The TAC also discussed the degree to which each individual FEMA certification standard must be met. Mike advised that the package of findings submitted to FEMA should show that all deficiencies have been resolved. He is aware of instances where FEMA returned incomplete certification requests for more action before the package would be accepted, even in instances where deficiencies do not pose discernable risk.
* Railroad Embankment: In response to OST question #2, the TAC members agreed that no further information is needed regarding Cornforth’s finding that the railroad embankment does not meet the margin of safety requirements, in its present condition, as a levee capable of protecting against a 1-percent-annual-chance flood event. The TAC further recommends a subcommittee be established to identify alternatives to be forwarded to the OST and, upon approval, provided to a consultant for detailed analysis. The following observation was also made about the railroad embankment at the meeting:
  1. The USACE Northwest Portland District and PEN 1 built a project in 1997 to provide protection against a 1-percent-annual-chance flood along the subject railroad embankment. The level of protection was selected after a Section 205 study was conducted on the full PEN 1 system. This study will be available online for TAC members on the Oregon Solutions website.

USACE Rehabilitation and Inspection Program and Planning Assistance to States Program

* USACE presented on their Rehabilitation and Inspection Program (RIP) to differentiate the purpose and standards of their program from FEMA’s National Flood Insurance Program (NFIP). The RIP requires that non-federal partners operate and maintain levee systems to USACE standards in order to maintain in “active” status in the RIP and to qualify for USACE assistance. Although, all federally authorized levee systems qualify for flood fighting support during major events regardless of status. Another benefit of being in active status in the RIP, is after a high water event, the USACE can provide financial assistance for repairs if the levee system is damaged. RIP requirements are intended to ensure the levee system is maintained and operated to USACE standards in order to provide reliable protection from flood events for people and property.
* See PowerPoint slides posted (in PDF format) to the Oregon Solutions website here for more information: <http://orsolutions.org/wp-content/uploads/2014/10/RIP_PAS_overview.pdf>
* In 1996 the USACE conducted an economic feasibility study around appropriate policy and regulation under Section 205 in which the authorized flood control project along the railroad embankment was selected. Lance Helwig (USACE) agreed to share this study with the TAC members.
* Lance Helwig (USACE) also announced that the USACE had allocated funding under the *Planning Assistance to States* program for purposes of developing conceptual design alternatives along the existing railroad embankment. See slides included on the web site noted above.

Additional Levee Performance Modeling

* The TAC agreed that additional levee performance modeling should be conducted for the USACE authorized water surface elevations (varying from ~ 1% to ~0.2% for PEN 1; ~0.2% for PEN 2). In PEN 1 and PEN 2, the 1936 Flood Control Act authorized both districts to the 1876 water surface elevation. The TAC recommends the OST approve this action so that this modeling may begin as soon as possible.
* A question was asked as to whether FEMA’s NFIP flood elevations are likely to change in the near future. FEMA recently increased NFIP flood elevations in the Klamath River basin and this could potentially occur in relation to the FEMA BiOp. After discussion, it was agreed that, in the interest of time and absent information from FEMA to the contrary, the OST should proceed to plan for the flood elevations as currently defined by FEMA.
* Regarding OST question #3, the TAC discussed whether additional flood levels should be modeled to account for climate change, seismic events, or reevaluated flood elevations by either FEMA or USACE. The TAC requested additional information regarding the potential impact to FEMA insurance flood rates; why PEN 1 was only authorized to protect to a 1% probability flood; the rationale for the level of protection for each district; how other regions/districts select their levels of protection, and why the current levels of protection were chosen. The TAC would like discussion of these issues at the next meeting, after which they will consider whether to convene a subcommittee to discuss what additional flood levels would be appropriate for modeling.
  + MCDD staff agreed to compile case studies that would provide additional information about how other regions, cities, and counties selected their level of protection.

Old Business

* The TAC agreed that future meetings will be held on the third Monday of each month from 2:00 – 5:00 pm (pacific time).
* The TAC reviewed and accepted the TAC Operating Protocols, with minor edits. The final protocol, as amended, is attached to these notes.

**Recommendations and Next Steps**

* **Levee Engineering Assessment Methodology.** Cornforth and WEST Consultants presented findings and methodology to the TAC at the September 15th and October 20th meetings. In order to provide the TAC adequate time to review the revised Assessment, the TAC will have a final discussion about remaining methodology questions at the November 17, 2014 meeting.
* **Railroad Embankment.** The TAC has reviewed the Cornforth report and concludes that there are many challenges with this levee segment; technically (slope stability), operationally (operations and maintenance agreement), and jurisdictionally. It also recommends that a subcommittee be convened to identify alternatives solutions. Volunteers for the committee include: Brock Nelson (Union Pacific), Mike Meyer (Cornforth Consultants), David O’Langaigh (Portland Bureau of Transportation), Jeremy Appt (USACE), Tom Braibish (ODOT), Tom McCausland (City of Gresham), Mandy O’Hara (MCDD), Nancy Hendrickson (City of Portland – BES), Liz Ruther (ODFW), Bill Ryan (City of Portland – BES) and potentially Travis Ruyball (City of Portland – Parks and Recreation).
* **Additional Modeling.** After reviewing the benefits provided by staying active in the USACE’s Rehabilitation and Inspection Program (RIP), the TAC recommends modeling both PEN 1 and PEN 2 to the USACE’s authorized water surface elevations, which vary from 1% to ~0.2% chance flood elevations. Additionally, the TAC recommends scheduling a discussion of the questions asked by the TAC for the next meeting. If warranted, after that discussion, the TAC will convene a subcommittee to determine what additional elevations should be modeled and present their recommendations through the TAC to the OST.
* **Corps economic study.** The Corps agreed to circulate the 205 study (1996) that resulted in PEN 1’s authorized flood control project along the railroad embankment.
* **Next Meeting.** November17 2:00-5:00 p.m.

**Meeting Participants**

*Interim Steering Committee*: Mike Stuhr (City of Portland, Water Bureau) and Christine Svetkovich (DEQ)

*TAC Members*: April Siebenaler, Bill Ryan (City of Portland, BES), Brian Freeman, Brian Vincent, Brock Nelson (Union Pacific), David O’Langaigh (Portland Bureau of Transportation),, James Heyen (WEST Consultants), Jason McBain (USACE), Jeff Boechler (ODFW), Jeremy Appt (USACE), Lance Helwig (USACE), Mandy O’Hara (MCDD), Mike Meyer (Cornforth Consultants), Nancy Hendrickson (City of Portland, BES), Sara Morrissey (MCDD), Sheila Holden (Pacificorp), Steve Gaschler (City of Troutdale), Sunny Simpkins (MCDD), Thomas Braibish (ODOT) and Thomas McCausland (City of Gresham).

*Facilitation Team*: Rick Mogren and Julia Babcock

*Other Attendees*: Jeff Tilton (USACE), Jeremy Appt (USACE), Jeremy Britton (USACE), Walter Valenta, Gary Kunz, Bob Dolphin, and John Nadig

**ATTACHMENT**: TAC Operation Protocols