

Appendix 1.8

Response to Corps comments on SWIF 1st draft provided August 2016.

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Sent: Friday, August 26, 2016 2:43 PM

To: Vollink, Scott D NWD @ NWK <Scott.D.Vollink@usace.army.mil>; Ifft, Charles H NWS <Charles.H.Ifft@usace.army.mil>

Subject: RE: Final reminder: Pierce County SWIF, Community Technical Group SWIF Plan Feedback by Aug. 27

A few thoughts based upon a quick review. Well integrated plan, brings together an ecosystem/watershed approach. Effort, thought and thoroughness evident throughout. Great maps. Implementation will be their next challenge, but that starts with a good plan.

1. Couple of observations or suggestions (not a requirement for acceptance, more to presentation):
 - * With 33 levees and this level of detail roll-ups/summaries forward in each section rather than at the end. Orients your reader/reviewer more quickly if they aren't familiar with watershed. Personal preference. Sometimes less is more....

Response: Chapter 2 is intended to give an overview of the levee system, with background information about each levee. Levee descriptions were informed by the USACE CEIs, USACE levee screenings, and Pierce County SWM maintenance records, Table 2.1 has been provided at the beginning of the chapter to give a basic summary identifying each levee and the current CEI rating. Following the table is a map that indexes all the PL 84-99 levees. This listing is made consistent throughout the document for consistent reference.

2. *Clarify fed vs. non-fed levee as that is lost in translation. You can clear this all up on table 2. Footnote "all levees non-fed" or * designates Fed levees or whatever.

Response: Pierce County is the sponsor of all the levees addressed in this SWIF. This is stated in the second sentence of Chapter 2.

* This is a 20 year plan. They cover near, mid and long range plans. (table 8.6) Focus on near term actions to correct inspection deficiencies to reclaim active status in PL84-99. It's doesn't appear it will take 20 years to do that. I know each year things change, but that's what the updates address.

Response: This SWIF provides an action plan (Chapter 8) to address identified deficiencies through corrective actions, as well as improvements to the system of levees through phased implementation. The SWIF is implemented through one or more phasing and sequencing categories: Near-term (2 year); Mid-term (6-years); Long-term (7-20 years); Programmatic (on-going); Monitoring (on-going).

Those deficiencies identified through on-going CEI inspections as well as those identified through our own asset management system will be addressed in a systematic way to prioritize to optimize risk reduction. Most deficiencies will be corrected within the near term; unless the appropriate level correction demands a more extensive repair or longer term solution. Interim risk reduction measures will be applied as appropriate.

The rivers addressed in this SWIF (Puyallup, Carbon, White, Nisqually) are dynamic, due to the high gradients and high energy flows of our rivers in close proximity to the mountains feeding our rivers. Additionally, the amount of sediment in our rivers is increasing due to retreating glaciers feeding the system; which tends to drive the river resulting in ongoing damages and the need to build additional resiliency in the levee system to better withstand these forces. The plan documents the history of damage to our levees due to ongoing changes in the river system, and provides a risk analysis providing the level of risk exhibited at each levee segment, recognizing where past damages have occurred, the current condition of the levee segment. The plan provides for a Capital Maintenance program that is intended to increase levee resiliency to better withstand damages and reduce risk through focused refinements to specific levee segments phased over the next 20 years. Additionally, this SWIF aligns with our Flood Hazard Management Plan and suite of capital improvements that are phased over the mid-term and long term depending on funding availability, prioritized to optimize risk reduction.

Programmatic actions such as our asset management program, and vegetation strategy are necessary to implement the goals and objectives of the SWIF.

Monitoring actions, include our levee inspections necessary to assess levee condition and changing river conditions to optimize flood risk reduction.

3. Table 5.3 and 5.4 effective summary of decision matrix. Interesting footnote to table 5.4 where they used LSAC as multiplier except reversed the scoring to use 5 as highest risk. We debated this on the policy team for several years whether "1" or "4" should be highest risk class. We settled on "1" as it is the first priority. We didn't foresee using it as a multiplier. Kudos on that one.

Response: Chapter 5 provides our SWIF Risk Assessment Report that includes an analysis of the structural risk associated with the system of levees, based on levee condition assessments; river hydraulics; documented history of levee damage; and population, infrastructure, industry and regional economics. This information was pulled from several sources including our recently adopted Rivers Flood Hazard Management Plan, SWM M&O maintenance records; USACE G.I.; and the USACE Levee Screenings reports that have been made available to us by the Seattle District office. We have been focused on developing a methodology to prioritize our maintenance work based on recognition of risk. We found that the LSAC was very helpful since it provides a numeric value that conveys a relative risk associated with the expected future performance of the levee segment. This value is factored into our Relative Flood Risk Worksheet (Table 5.4), that accounts for what is at risk, the frequency of damage, susceptibility to damage, multiplied by the LSAC potential severity of damage at any given segment. Each segment was assessed in this manner with a give score and final ranking recognizing the level of risk. This information is then incorporated into our Action Plan for prioritizing the phased implementation of the SWIF.

4. Table 8.2.4 what is the value of corrections made to date? It's probably in there, could have missed it, but put it here on the table or somewhere close by where it's easy to see.

Response: The cost of correcting the identified deficiencies is provided in Table 8.11 "Cost – Near-term Deficiency Corrections. Total cost is \$803,000.

5. An integrated Gantt chart reflecting all the work by levee system with time phased alignment. Again, maybe it's in there and I missed it with all that's in there.

Response: The phased implementation of the SWIF Action Plan is provided in Table 9.3 "Deficiency Correction and Planned Capital Improvements". The schedule provides a timeline and milestones of when deficiencies will be corrected and improvements will be completed. This report will be updated as new information is obtained, establishing a milestone for correcting identified deficiencies within 2 years following CEIs, and providing SWIF progress reports every 2 years starting in 2017. What is not incorporated into the chart is the list of Capital Maintenance Projects. This program of identifying levee segments for building higher level resiliency into the levee system will commence in 2017. We anticipate that approximately 10% of the levee system (approx.. 3.9 miles) will be identified for phased implementation under this program.