

**CHEHALIS RIVER BASIN**  
**OFM ALTERNATIVES REPORT**

**Outline: Purpose, Process, Key Questions and Sources**

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**Purpose of the report:**

- *Provide a common base of information for the community, decision makers and other interested parties to use in making decisions for the ground action.*
- Meet the requirements of ESHB 2020

**Due date:** by July 31, 2012

**Public Draft:** Late May 2012

**Process Steps**

- Agreement amongst state agencies and Flood Authority on report outline, timeline and responsibilities: Target date January 31<sup>st</sup>
- Compile and draft sections of the report: Target date March through April
- Internal draft for state agency and Flood Authority staff review: Target date mid-May
- Review draft for interested parties: Target date Late May
- Final draft soliciting official comments from interested parties: Target date late June
- Final report with comments: Target date July 31<sup>st</sup>

**Required elements, key questions and potential work done or in progress to meet these elements:**

**(a) Address the potential for flood mitigation through upstream water retention facilities, including benefits and impacts to fish and potential mitigation of impacts;**

- Key Questions to be answered
  - What water retention options are still be considered? Mainstem dam, Skookumchuck, others?
  - What is the predicted flood stage effect at Doty, Bucoda, Twin Cities, Porter and Montesano? What is the spatial reduction of area flooded? What does the reduction in flood levels mean in terms of number of homes, businesses, threat to livestock and impact on I-5 and other major transportation facilities?
  - What are the positive and negative impacts to fish and other ecological functions (aquifer recharge, water quality)?
  - What is the projected cost?
  - What steps are necessary to build a dam? What is the likely timeframe?
  - What are the different perspectives on water retention? What perspectives are held in common and what are the major differences by members of the Flood Authority, tribes and other stakeholders?

## Information Sources

- Completed studies:
  - EES Phase I Study (high level recon re: potential water retention) + comments
  - Phase IIA Study (geotech/engineering for upstream water retention) + comments
  - Phase IIB Study (EES benefit/cost analysis using Corps methodology) + comments
  - Anchor QEA fisheries impact study
  - Corps Studies:
    - Twin Cities work on Skookumchuck Dam
    - 1978, 1982 review of water retention
  - Chehalis Basin Partnership Review of potential water storage projects
  - WSDOT review of Salzer Creek storage site
- In progress:
  - Anchor QEA fisheries enhancement study
  - Agency, Tribal, Interested parties' comments on fisheries impact study
- Additional study work?
  - Update benefit/cost information on mainstem based on updated H&H modeling, fisheries impact study, revised WSDOT figures for I-5 (TBD)

### **(b) Describe the current alignment and design of the federal flood levees proposed at Centralia and Chehalis, including extent of protection provided to these communities, and any upstream or downstream effects of the levees;**

- Key Questions to be answered
  - What is the current status of the Corps project? What are the next steps?
  - What is the predicted flood stage impact at Doty, Bucoda, Twin Cities, Porter and Montesano? What is the spatial reduction of area flooded? What does the reduction in flood levels mean in terms of number of homes, businesses, threat to livestock and impact on I-5 and other major transportation facilities?
  - What are the positive and negative impacts to fish and other ecological functions (aquifer recharge, water quality)?
  - What is the projected cost?
  - What steps are necessary for the project to move forward and what is the likely timeframe?
  - What are the different perspectives on the Corps project? What perspectives are held in common and what are the major differences by members of the Flood Authority, tribes and other stakeholders?

## Information sources

- Completed studies:
  - US Army Corps of Engineers Twin Cities Work- H&H modeling, levee alignments, mitigation work from Tetra Tech
- In progress:
  - Twin Cities wrap up report
  - GI H&H modeling effort (downstream mitigation questions)
- Additional study work or available studies?
  - Any information available from local entities?

**(c) Evaluate alternative projects that could protect the interstate highway and the municipal airport at Centralia and Chehalis, and ensure access to medical and other critical community facilities during flood events;**

- Key Questions to be Answered
  - What projects were considered?
  - What is the predicted flood stage effect at Doty, Bucoda, Twin Cities, Porter and Montesano? What is the spatial reduction of area flooded? What does the reduction in flood levels mean in terms of number of homes, businesses, threat to livestock and impact on I-5 and other major transportation facilities?
  - What are the positive and negative impacts to fish and other ecological functions (aquifer recharge, water quality)?
  - What is the projected cost?
  - What steps are necessary to build a dam and what is the likely timeframe?
  - What are the different perspectives on the projects? What perspectives are held in common and what are the major differences by members of the Flood Authority, tribes and other stakeholders?

**Information Sources**

- Completed studies:
  - WSDOT work
  - Any info from the Cities of Centralia or Chehalis, or from the Airport Board?
  - Other?
- In progress:
  - WSDOT studies re: I-5, Mellen St. intersection
  - Lewis County studies/info about airport/hospital/ community facilities

**(d) Discuss other alternatives that could provide flood relief and protection in the basin, such as replacement of highway bridges that constrain flood waters, flood easements on agricultural lands, livestock evacuation facilities and routes, small-scale water diversion and retention, use of riparian habitat and environmental restoration projects to mitigate damages from flood waters, and other projects or programs;**

- Key Questions to be answered
  - What projects were considered?
  - What is the predicted flood stage impact at Doty, Bucoda, Twin Cities, Porter and Montesano? What is the spatial reduction of area flooded? What does the reduction in flood levels mean in terms of number of homes, businesses, threat to livestock and impact on I-5 and other major transportation facilities?
  - What are the positive and negative impacts to fish and other ecological functions (aquifer recharge, water quality)?
  - What are the projected costs?
  - What steps are necessary for projects to move forward and what is the likely timeframe?
  - What are the different perspectives on the projects? What perspectives are held in common and what are the major differences by members of the Flood Authority, tribes and other stakeholders?

**Information Sources**

- Completed studies:
  - Survey of bridges- WSDOT, WSCC, Conservation Districts, local entities?

- Survey of culverts- WSCC/Conservation Districts
- Surveys of old dikes (need to find)
- In progress:
  - Use of riparian habitat/environmental restoration projects: WSCC/Anchor QEA/other?
  - Flood Authority's project matrix (Project Committee work)
  - H&H modeling in lower river → analysis of projects in the lower basin
  - DNR/CMER study on forestry/landslide/flooding effects
  - Chehalis Tribe work on Sickman-Ford Bridge
- Additional study work to be done?
  - Flood easements- WSCC
  - Livestock evacuation facilities/routes- WSCC
  - Small scale water diversion/retention- WSCC?
  - Forestry considerations- DNR, other?

**(e) Summarize the benefits and costs of recommended projects, using available information and accepted benefit/cost methods; and**

- Key Questions to be answered
  - How do the projects compare in terms of costs and benefits?
  - What combinations of projects provide the most positive benefits for flooding and the less impact to other community and state interests?
  - Process question: how should this information be provided, and under what standards (i.e., Corps benefit/cost method, other?)

**Information Sources**

- Completed studies:
  - Corps work
  - EES Phase IIB Benefit/Cost Study
  - Earth Economics study
  - FCS Group Report
  - Other ?
- In progress:
- Additional study work to be done?
  - Update benefit/cost info on upriver water retention on mainstem?
  - Other benefits/costs info: needs to be developed for each "project"

**(f) Identify the responsible parties and procedures for making final decisions on funding, construction and governance of recommended flood projects, any related and necessary government agreements, and a schedule for these decisions.**

- Key Questions to answer
  - What decisions are necessary and by whom to move forward on the projects and what is the timeframe? Are there groupings of projects that have a similar process for decision making and set of responsible parties? What is needed by the decision makers in order to make a timely decision?
  - What challenges and assets affect the decision making process?
  - What lessons can be learned from work already accomplished (i.e., the FCS work)?

## **Information Sources**

- Existing info:
  - FCS Group report
  
- In progress:
  - Jim Kramer interviews
  - Further Flood Authority discussions
  
- Additional study work to be done?