MEETING SUMMARY

Advisory and Technical Committees Joint Meeting
Flood Control Zone District
May 21, 2012 2:30 - 4:30 p.m.

Location
Board of Skagit County Commissioners' Hearing Room, Skagit County Administrative Building, 1800 Continental Place, Mount Vernon, WA.

Meeting Purpose
For the Flood Control Zone District (FCZD) Advisory Committee (AC) members to conduct normal business and:

1. Acceptance of Meeting Summary
2. Workshop to discuss preliminary alternatives
3. To determine next steps and assignments, if any, for Technical Committees (TC)

Acceptance of April 16, 2012 AC Meeting Summary
Esco Bell pointed out an error on page 2 under Alternatives 3 and 4 – the water upstream of the Three-Bridge Corridor will be diverted with each bypass, rather than the water downstream. With this correction, Jason Easton made the motion to accept the meeting summary. Bell seconded. Motion passed (13/0/0).

Preliminary Alternatives Workshop
The AC and TCs were previously given a link to the Preliminary Alternatives presentation, a PowerPoint of the presentation, and a Read-Ahead document. The group attended an alternatives presentation in April, as well. The AC and TCs were also provided with a list of questions, for each alternative, to begin thinking about. For reference, the questions are attached to this meeting summary under Attachment A.

Kara Symonds, Skagit County Public Works, and Dan Johnson, U.S. Army Corps of Engineers (USACE), lead the meeting. Public input is a part of formulating each alternative, therefore, questions and comments were accepted throughout the workshop. It was restated that the alternatives can and may change as more information is gathered.

Note: Questions (Q) and Answers (A) are listed first. Q and A is followed by comments.

- Alternative 1 – No Action
  As mentioned in April's meeting, this alternative does not achieve the study's objective of reducing flood risk. Therefore, it will not be considered in the recommended plan. However, the No-Action Alternative will be used in evaluation of the range of alternatives during analysis under the National Environmental Protection Act (NEPA).

  Q: Does this alternative include ongoing dike maintenance?
  A: Under this alternative, the current baseline of activity is maintained. Dike Districts will continue the same level of maintenance for present conditions.

Q: What is the value of property loss during a 100-year flood?
A: USACE characterizes losses in average annual damages. The total value of property in the floodplain was tabled as an item that warrants future research.

Comments:
- The group should be provided with the total value of all developments and infrastructure located within the floodplain; private and public.
- The USACE's economics will be better explained in future documents.
- Study should document damages associated with pipeline interruptions.
- Riprap is being placed upstream of the BNSF Bridge (wing dam) on waterward side.
- Modeling should incorporate tidal effects.
- All comments received through this process should be shared with the FCZD.

- Alternative 2 – Non-Structural and Dam Storage
  This alternative focuses on flood storage and imminent flood drawdown in the Upper and Lower Baker River Dam system, nonstructural components, and bridge debris management. This alternative does not involve the construction of significant new infrastructure.

  Q: What is rainfall based on?
  A: Rainfall is determined by rainfall run-off models and frequency analysis rather than historical records, due to historical data being incomplete or nonexistent in some areas.

  Q: Do nonstructural components include removal of levees (e.g. Cockreham)?
  A: Levee removal is considered nonstructural.

  Comments:
  - Nonstructural suggestions included cattle mounds, egress for flood waters i.e. an internal drainage plan, additional floodgates and spillways, an alert warning system e.g. reverse 911, posted evacuation routes, shelters e.g. the Port property, an early warning system for upriver communities, an upriver weather forecast/Doppler center, additional precipitation and river gauges, more education and outreach e.g. traffic routing, continued interagency coordination, watershed management, improved logging and forestry practices, and the requirement that there be a statement on the deeds of all homes in harm's way claiming such.

- Alternative 3 – Joe Leary Slough Bypass/Floodway
  This alternative primarily removes water upstream of the Three-Bridge Corridor via bypass or floodway. It includes dam storage and imminent flood drawdown; levees at Sterling, Sedro-Woolley, Burlington, and LaConner; the Mount Vernon Flood Wall; bridge debris management; and non-structural components. The essence of this alternative is to plan for water to leave the system prior to the three bridge corridor which reduces the need for levee improvements downstream of Sedro-Woolley.

  Q: Would there be time to drop some sediment before water flowed through?
  A: This would definitely be addressed.

  Comments:
  - This alternative would not be acceptable to landowners in the Sterling and Nookachamps areas, because it would raise water too high.
  - There are acceptability issues with residents in the Samish Watershed.
  - A bypass would have agricultural impacts.

- How would this concept correlate with Samish flooding?
- Fish habitat would be negatively impacted in the Samish. Tribes would be unhappy about the mixing of said fish.
- This bypass/floodway would be used approximately every 80 years.
- Interior drainage is significant, and sediment flow would be the most pressing feature to manage.
- There will be more strain on levees without a bypass/floodway.
- The group should be provided the cost estimate of a freeway shutdown.
- GLO maps identify where the Olympia Marsh was located.
- This alternative avoids three bridge corridor work.
- Ridge drainage affects flows in Joe Leary Slough.
- How would this get through NEPA review?
- The timing and frequency of use is key.
- Consider the trade-offs when purposefully inducing flooding.
- Flood waters need egress through sea dikes, i.e. interior drainage.
- Reducing the velocity of water would encourage sedimentation on the floodplain which recharges soil.
- A 100-year flood event will already spill at Sterling.
- Could utilize existing road alignments and rights-of-way as levee alignments.
- An improved Joe Leary Slough/Freeway crossing would cost a lot of money.

- Alternative 4 – Swinomish Bypass/Floodway

  This alternative primarily removes water downstream of the Three-Bridge Corridor via bypass or floodway. It includes dam storage and imminent flood drawdown; bridge modifications of Burlington Northern Santa Fe and Division Street bridges; levees built or set-back in the Sterling, Sedro-Woolley, and LaConner areas; the Mount Vernon Flood Wall; bridge debris management; and non-structural components.

  Comments:
  - This alternative would be ineffective without the Skagit River Bridge and Interstate Highway Protection Project. This project will cost approximately $650 - $800 million.
  - A ring dike would have to be formed around La Conner.
  - The houses on the levee along Swinomish Slough would need to be addressed.
  - Reference the Puget Sound Nearshore Project
  - This would only be used about every 65 to 80 years for about 3 to 4 days at a time.
  - Bypass could open up without bridge modification.
  - Highway 20 was built to the 1909 event.
  - Telegraph Slough is an opportunity for restoration and is identified in the Puget Sound Nearshore Ecosystem Restoration Project.
  - North/South travel routes (south of Highway 20 and west of I5) would be impacted.
  - Utilize existing levees e.g. La Conner
  - Which way would the water flow when the bypass hits the channel?
  - What flow would activate the bypass? Historically it would have been used twice.
  - Would BNSF replace the bridge as coal train mitigation?

- Alternative 5 – Urban Area Protection

  This alternative focuses on placing levees or ring dikes near or around critical infrastructure in Burlington, Mount Vernon, and Sedro-Woolley. It includes dam storage and imminent flood drawdown, the Mount Vernon Flood Wall, bridge debris management, and non-structural components. This alternative prioritizes flood risk reduction for areas with the potential for high economic and infrastructure damages during a large flood event.

Comments:

- This alternative creates similar problems in the Samish area like Alternative 3.
- According to some, Burlington should take the brunt of a flood. While others believe damage to Burlington's economy would create too much hardship for the whole of the County.
- This alternative transfers risk away from Burlington to the Samish.
- This alternative uses the ring dike concept which could increase risks to life safety.
- Properties subject to flooding should have language stating that on the deed.
- This alternative would require interior drainage as well.
- Clear Lake needs drainage now.
- Wide ranging economic impacts if Burlington floods.
- West Mount Vernon features should incorporate bridges, the trucking company, and tulip traffic.

- <u>Alternative 6 – System-Wide Levee Setbacks</u>
  This alternative sets back the entire levee system along the Skagit River by modifying bridges and creating a West Mount Vernon and Fir Island Bypass. It includes dam storage and imminent flood drawdown, levees in Sterling and Sedro-Woolley, the Mount Vernon Flood Wall, bridge debris management, and non-structural components. This alternative increases conveyance of floodwaters though the river system and contains floodwaters within the river system by setting back the entire levee system

  Q: Where would the water spill on Fir Island?
  A: The water will spill across the lowland.

  Q: Where are the clay pits located?
  A: This would be determined in the geotechnical evaluation.

  Comments:
  - There is concern regarding levee stability when setback. Levees are currently built on top of "foundation" naturally created by the river. Seems these levees would be more prone to failure.
  - Sediment aggradation would still be an issue. How much time would levee setbacks provide?
  - This alternative seems more environmentally sound.
  - There are some old garbage dumps that would need to be removed and could be costly to do so.
  - Ric Boge, formerly an employee of Skagit County Public Works, wrote a report that stated every city park along the river was previously a garbage dump.
  - There could be high mitigation costs.
  - Close levees increase flow velocities.
  - Would levee setbacks trigger an increase in levee height?
  - This alternative would require addressing all bridge crossings.
  - Is overland flow for Fir Island an option?
  - Incorporate the river's personality by combining pieces of alternatives to best fit each reach.
  - This alternative would keep the highways open during an event.
  - Trade-offs between a setback levee and bypass in West Mount Vernon.
  - Would need to address Division Street Bridge.
  - Mitigation costs are part of the project costs.

- How will tides be incorporated into the modeling?

Additional Information
Johnson stated that any tasks the USACE does not oversee, or consider an action item, can still be included as recommendations in the plan. He also noted that the lines drawn on the maps of these alternatives are not final. The final recommendation may be an amalgamation of these alternatives.

Suggested Next Steps and Meeting
1. Set-up Technical Committee meetings to discuss the alternatives further. Daryl will inquire with County staff regarding organizing technical committee assignments.

Adjourn:
The meeting adjourned at 4:44 p.m.

PRESENT AT FCZD ADVISORY COMMITTEE MEETING:

Name	Representing	Affiliation	Present	Absent	Proxy
Anderson, Mayor Mike	Cities and Towns	City of Sedro-Woolley		X	
Boudinot, Bob	ETC	Skagit Land Trust	X		
Boudreau, Mayor Jill	Cities and Towns	City of Mount Vernon			X Esco Bell
Carey, Bob	ETC	The Nature Conservancy	X		
Carlson, Todd	LUTC	WA Dept. of Transportation	X		
Easton, Jason	LUTC	LUTC	X		
Flaig, Dean	DDTC	Drainage District 21	X		
Halverson, Leonard	At-Large	Sterling Area	X		
Hamburg, Daryl	DDTC	Dike District 17	X		
Hughes, Robert	LUTC	Ag. Adv. Committee	X		
Kunzler, Larry	At-Large	Skagit River Flood Historian	X		
Nelson, Stanley	DDTC	Dike District 22	X		
Pflug, Dave	ETC	Seattle City Light			X Bob Carey
Sexton, Mayor Steve	Cities and Towns	City of Burlington		X	
Solomon, Shirley	ETC	Skagit Watershed Council	X		

STAFF	
Name	**Affiliation**
Berentson, Dan	Skagit County Public Works
MacMullen, Meghan	Skagit County Public Works
Symonds, Kara	Skagit County Public Works

OTHER INTERESTED PARTIES	
Name	**Affiliation**
Borman, Neil	Environmental Technical Committee
Chang, Margaret	USACE
Chesterfield, Blaine	City of Mount Vernon
Ehlers, Carol	Citizen
Eriksen, Karl	USACE
Freiberger, Mark	City of Sedro-Woolley
Goss, Travis	USACE
Hadley, Hannah	USACE
Johnson, Dan	USACE
Jones, Gary	Attorney for Dike Districts 3, 17, and 22
O'Donnell, Dan	Citizen

Attachment A
Questions for Alternatives Workshop

Alternative 1: No Action

No questions were provided.

Alternative 2: Non-Structural and Dam Storage Alternative

1. Are there any other non-structural features that should be considered in this alternative?
2. Do you have suggestions of locations for 1) evacuation routes, 2) installation of river gages, 3) real estate acquisition, 4) elevation of structures, 5) flood proofing of buildings, and 6) relocations?
3. Are there additional opportunities to better manage large woody debris in the river?
4. Can this alternative address any needed improvements to existing non-structural solutions?
5. What are the main real estate and/or land use concerns you foresee with implementation of this alternative?
6. What are the pros and cons to this alternative?
7. Do you agree or disagree with the "assumptions" identified for this alternative? Are there additional assumptions that need to be identified?

Alternative 3: Joe Leary Slough Bypass or Floodway

1. Would you prefer a floodway or a levee-aligned excavated channel in this alternative?
2. What agency would be responsible for maintenance of the bypass/floodway?
3. What are the maintenance concerns associated with this alternative?
4. Are there any concerns with the bypass/floodway and associated levee alignments? If so, can you suggest an alternative alignment?
5. What are the main real estate and/or land use concerns you foresee with implementation of this alternative?
6. Are there any other features that should be included in this alternative?
7. What are the overall pros and cons of this alternative?
8. Can any additional features be added to the alternative that would lessen the environmental impacts?
9. Do you agree or disagree with the "assumptions" identified for this alternative? Are there additional assumptions that need to be identified?

Alternative 4: Swinomish Bypass or Floodway

1. Would you prefer a floodway or a levee-aligned excavated channel in this alternative?
2. What agency would be responsible for maintenance of the bypass/floodway?
3. What are the maintenance concerns associated with this alternative?
4. Are there any concerns with the bypass/floodway and associated levee alignments? If so, can you suggest an alternative alignment?
5. What are the main real estate and/or land use concerns you foresee with implementation of this alternative?
6. Are there any other features that should be included in this alternative?
7. Can any additional features be added to the alternative that would lessen the environmental impacts?
8. Do you agree or disagree with the "assumptions" identified for this alternative? Are there additional assumptions that need to be identified?
9. What are the overall pros and cons of this alternative?

Alternative 5: Urban Areas and Critical Infrastructure Protection

1. What agency would be responsible for maintenance of the levees proposed in this alternative?
2. Are there any concerns with the levee alignments? If so, please suggest alternative levee alignments.
3. Are there any other features that should be included in this alternative?
4. What are the main real estate and/or land use concerns you foresee with implementation of this alternative?
5. Are there any other features that should be included in this alternative?
6. What are the pros and cons to this alternative?
7. Do you agree or disagree with the "assumptions" identified for this alternative? Are there additional assumptions that need to be identified?

Alternative 6: System-Wide Levee Setbacks

1. What do you envision as the design of the levee setbacks?
2. What agency would be responsible for maintenance of the levees proposed in this alternative?
3. Are there any concerns with the levee alignments? If so, please suggest alternative levee alignments?
4. Are there any other features that should be included in this alternative?
5. What features can be added that would lessen the environmental impacts of the alternative?
6. What are the main real estate and/or land use concerns you foresee with implementation of this alternative?
7. What are the pros and cons to this alternative?
8. Do you agree or disagree with the "assumptions" identified for this alternative? Are there additional assumptions that need to be identified?

Overall Questions:

1. Which alternatives do you think would provide the greatest reduction in flood risks?
2. Are there any studies/reports you could recommend to assist the USACE's study efforts?