

Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

With LJK Comments 12/31/2012

Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
1.	3FI	7/13/2012	<p>Please consider the mission and goals of the 3FI team as they relate to the Corp's proposed alternatives. (Mission: To create and advance mutually beneficial strategies that support the long-term viability of agriculture and salmon while reducing the risks of destructive floods Goal 1: Restore estuary habitats and functions in the tidal Skagit Delta needed to meet the Skagit Chinook Recovery Plan goal (approximately 2,380 acres is the remainder needed). Goal 2: Reduce the risk of destructive flooding by implementing flood risk reduction alternatives that maximize river and estuary habitats and functions whenever possible and minimize the conversion of farmland. Goal 3: Protect and improve agricultural land base and infrastructure (20,000 acres protected through agricultural easements and drainage structures are maintained and enhanced).</p>	<p><u>Letter to Corps from Farms, Fish and Floods Initiative ('3FI')</u></p> <p>These goals while lofty in concept appear to have been created through rose colored glasses to make the authors feel good about themselves because they appear to be unachievable and in conflict with each other. One goal wants to take 2,380 acres of farmland out of production much like the fiasco at Fishers Slough while another wants to minimize the conversion of farmland (minimize is not the same as stop and stopping the conversion of farmland is paramount to preserving it).</p>

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2.	Anacortes Water Treatment Plant	5/7/2012	Intake for plant is on opposite side of the river bank from the plant.	<p><u>E-mail to Corps fm Anacortes Public Works Director</u></p> <p>Comment noted but not sure why it was made other than if the levees were setback in that area it could impact the intake facility. In fact if the levees were setback on the left bank they would have to move the water treatment plant that never should have been built in that location to begin with. Downstream from two sewage treatment plants. Maybe they could bottle the water and sell it with “Drink at your own risk” labels.</p>
3.	Anacortes Water Treatment Plant	5/7/2012	Propose a measure that would involve construction of a bypass channel that would run east of the Anacortes Plant through the River Bend area traversing what used to be the Ledger Lake location. Measure involves a meandering continuous flow channel with ability to increase capacity during flood events with a removable structure on the upper end. This measure follows a previously existing channel in this general area. This may be worth looking at in lieu of channel widening in the vicinity of the plant and the intake.	<p>The problem with this alternative would be that it would make the Water Treatment plant an Island with flowing water on all sides. The water treatment plant is in one of the worst places it could possibly be. The people of Anacortes need to be told the truth about its plant built on unstable volcanic soils, in an area subject to high volume flows. See also <u>Neal Hamburg May 1992 Testimony Before Joint Select Committee on Flood Damage Reduction</u> concerning the Riverbend area.</p>

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	LJK Note: The Aquatic Resources Group is the same collection of environmentalist and state/federal agencies who sacrificed the safety of the people living in the floodplain during the FERC hearings on additional storage during the PSE dam relicensing and are still doing everything they can to stop any additional storage/protection for the people of Skagit County. Many of these same people are also included in the Environmental Resource Agencies group.			
4.	Aquatic Resources Group	5/7/2012	What are the benefits of the cost to implement Articles 107 and 106.	I have no information, historical or otherwise to adequately answer these concerns. Also Corps had not identified who these people/organizations group or agencies are.
5.	Aquatic Resources Group	5/7/2012	What is the compensation needed to implement Article 107?	
6.	Aquatic Resources Group	5/7/2012	What are the environmental impacts of implementing the Baker River FERC license Article 106 and 107?	As with any environmental analysis, this question cannot adequately be addressed unless you know when and under what conditions the Articles would be implemented. Would refer reviewers to the following documents for potential guidance: <u>License Articles applicable to Article 107 c or Flooding; Preliminary Draft: Reservoir Management Related to Imminent Flood Conditions - Settlement Agreement Article 107C - Baker River Hydroelectric Project FERC No. 2150; PSE Publication of FERC License to Operate Baker River Hydrologic Project Settlement Agreement Article 107.</u>
7.	Aquatic Resources Group	5/7/2012	The environmental studies needed to determine the impacts of implementing the Baker River FERC license are the responsibility of the GI.	Not so sure this is a correct statement. One would think that all the environmental studies should have been conducted by PSE and FERC during the licensing process.

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8.	Aquatic Resources Group	5/7/2012	PSE needs to consider maximum outflows during spawning season.	This “consideration” needs to include what the flows would be without the dams in place, (e.g. given current weather conditions what would the flows be without the dams). PSE should not be required to produce more water than Mother Nature would have provided without the influence of mans folly.
9.	Aquatic Resources Group	5/7/2012	Do we know how deep the sheet flow is?	First thing we need to do is get rid of the term “sheet flow flooding”. The Skagit does not “sheet flow”. Areas that topographically are lower will become floodways where the water will be flowing faster and deeper than other locations (i.e. Gages Slough). The Skagit at the Highway 9 bridge is approximately 42 ft MSL. At the Bays (Skagit, Padilla and Samish) they are at 0. A 42 ft. drop in less than 8 miles. Its not going to “sheet flow.”
10.	Aquatic Resources Group	5/7/2012	Would the sheet flow take a house off its foundation?	Depends on the location of the house. If the “sheet flow” is a result of a levee break the closer you are to that levee or Gages Slough the more chance you have that the answer could be yes.
11.	Aquatic Resources Group	5/7/2012	What’s the hydrologic strategy? What levels are we looking at?	Again that question cannot be answered unless you describe under what circumstance the water gets there. A levee break, a manmade project that forces the water where it would not normally go or a putting the water onto the floodplain where it is trying to go. From a historical perspective we know that is Gages Slough to Padilla Bay. See

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12.	Aquatic Resources Group	5/7/2012	What is the most storage before we trigger a structural modification?	No structural modifications have been asked for. We can get 20,000 acre feet of storage with current conditions.
13.	Aquatic Resources Group	5/7/2012	Having a number of small dams along the systems still viable?	To my knowledge it has never been a viable concept. The fish people would come unglued. More likely than not the worst permitting nightmare imaginable.
14.	Aquatic Resources Group	5/7/2012	What happens if the 3x3x3 is inadequate (time and money) for the study.	There is no excuse for this process to fail. If it can't get done then we need new government employees. Get it done or turn in your resignation.
15.	Aquatic Resources Group	5/7/2012	Are there issues with putting people behind strengthened levees/ring dikes?	Are there issues? Of course there are issues. All levees have one thing in common. They promote a terrible sense of false security and then they fail.
16.	Aquatic Resources Group	5/7/2012	Do you have a check off sheet to show the analysis of the plans?	NEPA is the only "check off" sheet they need.
17.	Bieche, T		Preference for Alternative 5	Of course she prefers Alternative #5, she is a Burlington City Council woman.

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18.	Bieche, T		Is curious as to how the Corps will utilize the City of Burlington's hydrological analysis.	The Corps is not using the hydrology presented by Burlington and yes without a cost estimate it would be hard to make a decision on any project. Part of the cost must also include the damages that any proposed project will cause and the ensuing litigation that will be inevitable. <u>See: SUPREME COURT OF THE UNITED STATES DECISION: ARKANSAS GAME AND FISH COMMISSION v. UNITED STATES</u>
19.	Bieche, T		Least prefers doing nothing.	Nothing is exactly what will come of all this if Burlington's solution is to harm its neighbors to the North, South and East of the City.
20.	Bieche, T		Stated the need for estimated costs, construction timelines, and the with project H&H	The Councilwoman is absolutely right. I would add that construction timelines will more likely than not be dozens of years out considering that we do not have congressional funding to build anything and there are already 73 Billion dollars' worth of projects approved awaiting funding. See slide #5 of <u>Plan B Presentation.</u>
21.	Burlington City Council Meeting	4/12/2012	What hydrology is the Corps using for the GI? (What are the peak flow volumes?) City does not want to have to pay for improvements that they don't need.	Really? Only two comments from the Burlington City Council. Sad, so very, very sad. I guess they don't really believe there is a serious flood problem. That must be why they approved "\$805,453,934" million dollars' worth of new commercial construction since 1978.

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22.	Clark, D	5/20/2012	Alt 2: Likes how there is minimal impact to the urban areas and prime agricultural areas. May have opportunities for riparian habitat restoration upstream of Burlington. No features of concern	<p><u>E-mail to Corps from Dennis Clark</u></p> <p>This is one of the better written submitted documents received by the Corps. Well thought out and well-reasoned. Not saying I agree with everything he says but at least he has taken the time to think things through.</p> <p>The floodway designation will not reduce ag acreage however forcing the floodwaters into the Samish will result in takings lawsuits. See answer to #18.</p> <p>Widening the 3-bridge corridor, getting the water past Burlington, past I-5 and getting rid of it before it gets to Mt. Vernon once every 87 years, and building a responsible drainage system saves the Urban areas and preserves the farmland.</p> <p>By giving protection only to the urban areas you increase the damages upstream and downstream to rural county residents.</p> <p>Having a financial plan in place before picking any</p>
23.	Clark, D	5/20/2012	Alt 3: Likes how flood waters are diverted from Burlington and Mt Vernon. However, appears that there is potential for substantial environmental impacts to Samish Bay. Floodway may result in reduced agricultural acreage in County.	
24.	Clark, D	5/20/2012	Alt 4: No preferred features. Floodway may result in reduced agricultural acreage in County. And that floodway would fill Swinomish channel with silt and debris. Cannot see how this alt will reduce flooding anywhere other than downstream of Mt. Vernon.	
25.	Clark, D	5/20/2012	Alt 5: likes that alt prioritizes protection of the urban areas. No features of concern	
26.	Clark, D	5/20/2012	Alt 6: like that alt offers most potential for salmon habitat recovery and expands the functional floodplain. Has concerns regarding costs to construct levee setbacks.	

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27.	Clark, D	5/20/2012	Need to see cost/impacts before deciding on preferred alternatives.	alternative should be the priority.
28.	Clark, D	5/20/2012	Alternatives need to be analyzed for potential to enhance salmon recovery.	Agreed. All options should be reviewed under the looking glass for their “potential” to enhance salmon recovery. Of course the easiest way to enhance salmon recovery would be to stop eating them.
29.	Clark, D	5/20/2012	GI alternatives need help achieve or be compatible with the goals of Envision Skagit 2060	Depends on how realistic those goals are. Envision 2060 needs to be compatible with farmland preservation and flood risk reduction.
30.	Cook, T		Prefers the Joe Leary Floodway because topography lends itself to this solution and there are few buildings this way and it has potential for the highest capacity.	The Corps of Engineers did not present the document that Mr. Cooks comments came from. Topography does not “lend itself” to this solution. The water first goes through Burlington via Gages Slough and then to Bayview where it splits to Padilla Bay and into the Samish. See <u>Dames & Moore Map</u>
31.	Cook, T		Second best is the Swinomish Floodway.	See <u>Avon Bypass Issues Page</u> .

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32.	Cook, T		The most cost effective is to setback levees. Proposes: that levees be set back and that the existing bridges be extended. Build a weir or overtopping levee a foot lower than the main Burlington levee along Lafayette Rd and UGH Hospital. The main Burlington levee would need to extend to Burlington Hill. A long weir can be installed at Avon as a relief value in large events. *Includes design drawings. Also improve fish habitat.	Levee cannot be extended to Burlington Hill. No fill is allowed in Gages Slough. See <u>Floodway Issues Page</u>
33.	Dike and Drainage District Workshop	6/15/2012	Joe Leary Slough takes pressure off the dikes downstream	Yes by artificially forcing the floodwaters of the Skagit onto someone else's property the pressure would be taken off the dike districts that have been artificially flooding their neighbors for over a hundred years. I will never understand how dike district 12 & 17 commissioners can sleep at night.
34.	Dike and Drainage District Workshop	6/15/2012	Has the Corps calculated the impacts of debris that may be introduced into the Swinomish Channel?	If there was a containment channel the debris would be trapped behind several debris structures as part of the channel. If it is just designated a floodway the majority of the debris would be strewn across the floodplain before it makes it to the Swinomish Channel like it used to do long before anyone lived here.
35.	Dike and Drainage District Workshop	6/15/2012	The urban levee alternative needs to incorporate interior drainage and evacuation plans	Yes. Absolutely. However interior drainage and evacuation plans should be part of all alternatives even Alternative #1. After attending the "table top exercise" I have one message for people living in the floodplain;

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36.	Dike and Drainage District Workshop	6/15/2012	May want to consider not completely enclosing the urban areas.	Agreed. Ring dikes are nothing but bathtubs of death and destruction.
37.	Dike and Drainage District Workshop	6/15/2012	Please define levee modification.	Really? How about anything that changes the current status of the levee, you know like you DD's have been doing without permits for years.
38.	Dike and Drainage District Workshop	6/15/2012	Should consider using sheet pile wall at Mount Vernon and the Riverbend Area rather than a setback levee. This would be cheaper than having to buy land for setback levees.	I have never heard of the Corps talk about or present any plans that contained a "sheet pile" wall. I think they had some of those in New Orleans and we all know how that turned out.
39.	Dike and Drainage District Workshop	6/15/2012	Will the setback levees include excavation? There are concerns that the setback levees will fill up with sediment.	There can be no setback levees that do not include removing the current set of levees. Once the current set of levees are removed there is no reason to believe that the area from the levee to the river will fill up with sediment.
40.	Dike and Drainage District Workshop	6/15/2012	How much will the levees cost?	At this point no one knows. However, considering that the 1979 proposal just to "modify the levees" was approximately \$55,000,000. See <u>Seattle District MFR to Portland District RE: Status of Studies</u> Building a whole new set of levees would be astronomical.

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41.	Dike and Drainage District Workshop	6/15/2012	Cost of the levee setback alternative is a concern.	As well it should be.
42.	Dike and Drainage District Workshop	6/15/2012	number one priority is to get water off the floodplain (interior drainage). Their current ability to get water out without damaging the bay dikes is short of capacity.	Changing the emphasis of the GI study to one of letting the water onto the floodplain and building an interior drainage system that would get the water off the floodplain in a short amount of time would be beneficial to everyone.
43.	Dike and Drainage District Workshop	6/15/2012	Letting floodwater exit at Sterling makes sense.	Sure it does especially since Dike 12 and 17 are responsible for that happening sooner than it would under natural conditions HOWEVER, you have to realize that the water goes to Gages Slough and through Burlington out to Padilla Bay and the Samish. If that is what you want to do you have no argument from me. However if you plan on forcing the water into the Samish east of the i-5 weir then you will have serious litigation problems.
44.	Dike and Drainage District Workshop	6/15/2012	In the Riverbend area there is a lake area that gets wet during flood events	That would be the remnants of Lake Ledger. See comments by Anacortes above.
45.	Dike and Drainage District Workshop	6/15/2012	Are bridge modifications necessary for the levee setback alternatives	Levee setbacks would definitely have to have bridge modifications.

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46.	Dike and Drainage District Workshop	6/15/2012	It should be noted that when the Fir Island levees breached, Sterling still flooded but the base elevation dropped south of Mount Vernon	Notation noted and accepted. Thank you. The reason Sterling still flooded and was not impacted by the Fir Island break was that Dike 17 and Dike 12 are holding the water upstream. The levees breached at Fir Island due to the fact that Dike District 12 is throwing a minimum of 6 feet of water towards Fir Island and that when combined with an incoming tide was too much for the system.
47.	Dike and Drainage District Workshop	6/15/2012	Breaching of Fir Island levees didn't help anyone.	
48.	Dike and Drainage District Workshop	6/15/2012	The Fir Island bypass won't help relieve the pressure for the upper part of the system.	Depending on where the "upper part of the system" is defined this is a true statement. It will only placate the fish people and take more farmland out of production.
49.	Dike and Drainage District Workshop	6/15/2012	How much does levee setback reduce the flood effects?	Depends on how far back you set the levees.
50.	Dike and Drainage District Workshop	6/15/2012	Corps should look at NHC report to determine the importance of modification of the BNSF Bridge for flood control.	The Corps has hired nhc and one of their task is to evaluate the BNSF bridge impacts. The bridge does not "back up" any significant amounts of water however it clearly redirects the flows into the adjacent levees and creates scour conditions which are detrimental to the general safety health and welfare of the individuals behind the levee.

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51.	Dike and Drainage District Workshop	6/15/2012	Has the Corps done a bathymetric survey of the system lately?	Define lately?
52.	Dike and Drainage District Workshop	6/15/2012	Need to look at what it would cost to harden upstream levees when trying to decide between the two bypass alternatives.	Why? How about we raise houses of the people the dike districts have hurt and then work on the levees?
53.	Dike and Drainage District Workshop	6/15/2012	What will be done about the Riverbend area?	Good question. According to a long time Dike 17 Commissioner there is nothing much that can be done. See <u>Neal Hamburg May 1992 Testimony Before Joint Select Committee on Flood Damage Reduction.</u>
54.	Dike and Drainage District Workshop	6/15/2012	There is a risk associated with evacuation. The presence of a ring dike should not change protocols for establishing evacuation procedures.	First you have to have realistic evacuation plans. Currently neither the County nor the cities and towns have one.

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55.	Dike District 17	5/29/2012	Goal of DD17 is to provide minimum of 100 yr level of protection to designated urban and critical infrastructure areas, and to provide less than 100yr but greater or equal to existing level of protection for rural designated areas.	<p><u>Letter to Corps fm Skagit County Dike District #17</u></p> <p>So 99 year protection would be alright with Dike District 17. None of the rural levees should be given any more protection than they already have. Remember, Dike 17 and Dike 12 are responsible for induced flood damages for properties upstream and downstream of their locations. Adding 2-3 feet of freeboard to any level will guarantee that more water will be headed downstream and push up already intolerable flooding upstream as well.</p>
56.	Dike District 17	5/29/2012	GI should focus on Increased upstream flood storage (including but not exclusive to Upper and Lower Baker Dam storage), enhancement and redevelopment of existing infrastructures , increase and divert conveyance of waters to accommodate a major event (with focus on upstream diversions); enhance and redeveloped interior drainage to displace inundating flood waters. Concerns that potential upstream bridge modifications associated with the Swinomish Channel bypass will be cost prohibitive.	<p>It is very clear from this very obtrusive letter that purposely flooding the Samish River Basin is okay with the dike Districts. This is basically the same plan they put forth in 1979. It failed then and it will fail now. Dike Districts 12 & 17 have created problems for everyone on the floodplain and now they expect everyone in Skagit County to bear the cost for their irresponsible actions. This is nothing short of selfish, arrogant, pompous small town clown thinking. What a waste of time and money.</p>

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57.	Dike District 17	5/29/2012	Propose the following measures (from the Comprehensive Flood Hazard Management Plan) as vital parts to achieving the study goals relocation of Hamilton, Sewage Treatment Plant Ring Dike Sedro Woolley, Ring Dike General Hospital, Burlington Levy Certification Program, Three Bridge Corridor Levy Setback and Certification, Anacortes Water Treatment Plant Ring Dike, Downtown Mount Vernon Floodwall and Redevelopment, and La Conner Ring Dike.	There is no Comprehensive Flood Hazard Management Plan. The whole process was put on hold by the County and the Dike Districts. The draft plan was never approved. The projects put forth here were to be included in the draft plan and re-voted on at a later date. I can promise you that I will not vote for the Burlington Levee Certification Program and neither will several other SCFCZD Advisory Committee members.
58.	Dow, R		There is lack of representation for the residents of the Nookachamps in discussion regarding the ability of the area to take overflow.	Actually there are three committee members who have personal knowledge of the Nookachamps/Sterling area. Mr. Halverson, Mr. Flaig and myself. What the Corps ignored from the R. Dow's e-mail was his statement, "What I don't want to see is a plan that puts excessive water on a single area to protect special interests who have the money and power." Given the comments by the Dike Districts that is exactly the kind of project that is being pushed by them. Of course that is what they have been doing for over a 100 years.

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59.	Ehlers		Submitted article outlining her concerns regarding the safety of aging dams.	<p><u>News article submitted by Carol Ehlers titled "Dam failures predicted -- Old study warned of chain-reaction breakdowns"</u></p> <p>Article addresses dam that were determined 25 years ago to be unsafe and in July 2004 “almost a dozen failed”. Evacuation plans “to evacuate did not come until hours after a wave of water rolled through his neighborhood.” Spillways on the dams were inadequate to handle floodwaters from a 100-year storm.</p>
<p>LJK Note: The Environmental Resource “Agencies” are not entirely composed of government “agency” people but Tribes and Environmental groups as well. In fact it is very obvious by the content of the statements made below that many of the individuals are the same people who sit on the Aquatic Resource Group above.</p>				
60.	Environmental Resource Agencies	4/25/2012	From an ESA perspective. NMFS will need look at what fish are doing in a 60 year event and then compare what would happen to them in a bypass event. Don’t want fish to become stranded in a bypass.	See <u>Avon Bypass Issues Page</u> where in the past fish agencies had no problem with the bypass concept. And just for the record, fish are being stranded everyday on gravel/sand bars simply due to the influence of the tides. In the last 88 years the bypass would only have had to be used twice. If we have to sacrifice a few fish to prevent millions in property damage and potential human life, I’ll choose to lose the fish <u>every</u> time.
61.	Environmental Resource Agencies	4/25/2012	Is this alternative eliminating any preexisting structures?	A bypass alternative would more likely then not eliminate a preexisting structure, a floodway concept would not.

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Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
62.	Environmental Resource Agencies	4/25/2012	The resource agencies would like some hard criteria to evaluate the bypass alternatives	Hard criteria being defined as what?
63.	Environmental Resource Agencies	4/25/2012	What about Cherry Point/railroad. What about increases in traffic/commuter rail lines – would this lead to improvements/reconstruction of the bridge?	This question would be better put to the railroad who has been the worst corporate neighbor in the history of Skagit County. See January 2007 Angry Citizen <u>BURLINGTON NORTHERN SANTA FE RAILROAD: The Worst Corporate Neighbor In Skagit County History</u>
64.	Environmental Resource Agencies	4/25/2012	What does levee modification mean? What are these modifications?	They (the Corps) didn't know in April and in December they still don't know. Hopefully the person asking this question knows what the word modification means. The type of modification is still undetermined.
65.	Environmental Resource Agencies	4/25/2012	Need some clarification on assumption of design—whether or not existing levees that are set back are completely removed (including toe).	According to a past Mayor of the City of Burlington the dike District has no intentions of removing the current levee. Further clarification is indeed warranted and should be put in a written agreement with the dike district.
66.	Environmental Resource Agencies	4/25/2012	What does the econ analysis include?	Good question. I'm sorry but don't have an answer for you. However it definitely should include the amount of damages expected to upstream or downstream property owners no matter what the project.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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67.	Environmental Resource Agencies	4/25/2012	Power loss Compensation is another issue.	Yes, it actually is a really big issue. Damages due to the way the dams are operated will also be an issue. I do not envy PSE. To me they are stuck between a rock and a hard place. Drawdown the dams too early and you flood the overbank areas and no overbank or very little overbank storage is available for the second flood. Drawdown too late and you run the risk of urban flooding.
68.	Environmental Resource Agencies	4/25/2012	If we encircle Burlington, how do you calculate the costs and benefits?	Burlington cannot be “encircled” due to FEMA restrictions on Gages Slough.
69.	Environmental Resource Agencies	4/25/2012	How receptive are landowners to selling land?	If you are talking about the Samish River Basin I haven’t talked to a single person that is willing to “sell” their land to receive flood waters being forced unnaturally for flood control to protect dike districts.
70.	Environmental Resource Agencies	4/25/2012	The cost of levee removals might be a drop in the bucket compared to the land acquisition.	This question, among so many more, has not yet been addressed by the FCZD advisory committee. More important is the value of the farmland that will be subject to erosion last estimated at between 5,000 and 8,000 acres.
71.	Environmental Resource Agencies	4/25/2012	How is the Corps dealing with climate change?	<u>See E-mails to/from Corps/ Swinomish Environmental Policy Manager</u>

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72.	Environmental Resource Agencies	4/25/2012	How will the Corps with a moving environmental baseline?	Establish a baseline and don't let the Tribes or other special interest keep moving it so that nothing ever gets done.
73.	Environmental Resource Agencies	4/25/2012	Not dealing with climate change will be a fatal flaw. It is a major issue for the Skagit CoOp.	<u>E-mails to/from Corps/ Swinomish Environmental Policy Manager</u>
74.	Environmental Resource Agencies	4/25/2012	The Swinomish Tribe was under the impression that we would not go beyond the parameters of 106 of the FERC license.	That's funny because Skagit County residents were under the impression that the flood storage was part of the FERC license and not a "placeholder".
75.	Environmental Resource Agencies	4/25/2012	There would be some issues with moving outside the 106 because they may be reservoir issues with Coho management.	Government only has one responsibility, to protect the general safety, health and welfare of its citizens. The fish come second
76.	Environmental Resource Agencies	4/25/2012	The volumes and schedule listed in the license are different from what is the current operation by the Corps. Changes in timing from Nov 15 to Oct that would be a concern. The Swinomish Tribe is looking at current water control manual as the existing condition.	The Tribe needs to look to what is necessary to protect human life and property and how that protection can enhance fish survival. Again though this is proof that the damages caused by October floods is man-made not an Act of God.

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77.	Environmental Resource Agencies	4/25/2012	Change in seasonality of a early drawdown would require an analysis of productivity of salmon of the river. Table 2 is not an existing condition. There will be an environmental effect to using those tables despite the fact that they are listed in the FERC. Productive capacity was not analyzed the in the FERC license EIS. The GI process is supposed to do the environmental analysis of changes resulting from adopting the section 106 and Table 2. Productivity issues behind the dam and then flows downstream.	So the whole dam system is one big fish aquarium? Why wasn't "fish productive capacity" analyzed in the FERC license EIS? Seems to me like the commenter failed in getting this concern addressed in the forum that it should have been addressed and now wants to burden the taxpayer with the study.
78.	Environmental Resource Agencies	4/25/2012	How does Corps operations interact with the FEMA issues? Right now, NWFS would not be supportive of actions that are not consistent with the FEMA Bi-Op. We need to consider these issues.	I don't think the CORPS interacts with FEMA. I have brought to their attention several times that fill is prohibited In Gages Slough because it was designated as a conveyance area thus prohibiting 100 year protection for Burlington. See <u>Memorandum for Record re Dames & Moore Study; Dames & Moore Report; Dames & Moore Map; FEMA letter re floodway designation of Gages Slough; FEMA letter re development restrictions; FEMA letter re denial of appeal filed on Burlington FIS; Transcript of Burlington City Council Meeting November 8, 1984; USACE MFR Re: Skagit River Levee Repairs.</u>

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79.	Environmental Resource Agencies	4/25/2012	NMFS: NMFS needs to look at how landuse complies with the FEMA Bi-Op.	It's too bad that the SCFCZD doesn't have an active land use committee so that it could help address this concern. Land use in Burlington and Mt Vernon have made a joke of federal FIS ordinances and limiting development where no development should have been allowed.
80.	Environmental Resource Agencies	4/25/2012	You have not done any of the environmental scoping yet for the alternatives.	My understanding is that has now been accomplished. If it has not then it is a serious problem. All one has to do is to determine if 10% of the land east of I-5 has been developed. Dames & Moore Report
81.	Environmental Resource Agencies	4/25/2012	There are varying effects to the fish for each of these alternatives.	If you already know what the varying effects to the fish are then why are we being asked to study them.
82.	Environmental Resource Agencies	4/25/2012	NRCS has several easements within the floodplain and has a maps. Their policy is that things go around these things. NRCS left maps with Hannah.	The Natural Resource Conservation Services does have many easements and this issue should be turned over to the Corps legal department for a complete analysis for a written legal memorandum which should include but not be limited to if you have two easements for one piece of property which would control. First in line first in time or public safety vs public preservation.
83.	Environmental Resource Agencies	4/25/2012	Fish are important, but the bigger issue is where we are dumping sediment	There are several Corps documents that discuss sedimentation ending up in Skagit Bay.

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84.	Environmental Resource Agencies	4/25/2012	Skagit In stream Flow limits total diversions to 860 cfs, if this is a diversion from the river, then this would be a water rights issue. The Corps will need to get a Department of Ecology contact.	This is a classic red herring issue. A diversion during a flood emergency is not a water right issue it is a safety issue. No one wants flood water. The only reason it would be diverted is to protect life and property due to the irresponsible activity by local diking districts placement of their levees.
85.	Environmental Resource Agencies	4/25/2012	Alternative 6 is least favorable to TNC because some of the bypasses can get you most of the way there and there may not be the need for as much setbacks or levee improvements. Building a levee on one side is cheaper than building levees on both sides. The North Fork Bypass or the Fir Island Bypass—the North Fork Setback might be more acceptable?	The Nature Conservancy (“ TNC ”) has pushed for setback levees since the first days of their involvement even at one point stating that would be the only project they would support. What they fail to acknowledge in this comment is that if you only setback the levees on one side of the river you would have to “TAKE” twice as much land on that side in order to achieve the same amount of conveyance.
86.	Environmental Resource Agencies	4/25/2012	The Corps should look at offsetting impacts with good riparian habitat	Of course this would require the “TAKING of more private land.
87.	Environmental Resource Agencies	4/25/2012	: Not taking into account climate change will have considerable impacts on what gets support. Not considering increased flows would be a fatal flaw.	Again see <u>E-mails to/from Corps/ Swinomish Environmental Policy Manager</u>

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88.	Environmental Resource Agencies	4/25/2012	TNC and NRCS have easements for almost every footprint of the alternatives we have presented	This is a legal issue that must have a legal opinion before any project can be advanced but I just can't see the Nature Conservancy nor the Natural Resource Conservation Service using their easements to stop flood risk reduction. They would risk losing all public support for what they supposedly stand for.
89.	Environmental Resource Agencies	4/25/2012	How is the Corps dealing with climate change?	Again see <u>E-mails to/from Corps/ Swinomish Environmental Policy Manager</u>
90.	Environmental Resource Agencies	4/25/2012	How is the Corps dealing with the Mount Vernon Floodwall?	I have no idea other than they have stated on several occasions that the Mt. Vernon floodwall will be considered to be constructed in any proposal they put forth.
91.	Environmental Resource Agencies	4/25/2012	Any analysis of storage needs to be done through the GI	That would depend on what analysis you want conducted.
92.	Environmental Resource Agencies	4/25/2012	Pinch points are areas to focus on where there isn't an opportunity to setback levees.	If you can't setback all the levees then all you are doing is moving the problem downstream. This is why setting back the three bridge corridor levees, removing the current levees and getting rid of the water before it gets down to the next "pinch point" is the safest solution to the problem.
93.	Environmental Resource Agencies	4/25/2012	Ecology to provide toxic sites to consider as we're refining our alternatives.	The only potential "toxic sites" that I am aware of are the trailer park in Burlington and West Mt. Vernon both locations of garbage dumps in the past.

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94.	Environmental Resource Agencies	4/25/2012	Why do we have new levee construction in the Sterling area? Impacts to sterling and Nookachamps. Is the levee setback alternative an all or nothing deal, or are there specific areas where you can gain conveyance and reduce your risk?	There will never be a levee in the Sterling area due to the raising of the floodwaters up to 4 feet more than under current conditions. That is a “show stopper” if there ever was one.
95.	Environmental Resource Agencies	4/25/2012	Would the cross-island bypass reduce the water surface through Mount Vernon? If so, why isn't the Fir Island Bypass included in other alternatives?	When the levee broke in 1990 on Fir Island the water levels in downtown Mt. Vernon dropped 6 inches and then they slowly came back up again once Fir Island filled. During high tide the cross island bypass would have little impact on Mt. Vernon.
96.	Environmental Resource Agencies	4/25/2012	Is it possible that dam modifications with the Fir Island Bypass would get you a 90% solution?	No.
97.	Environmental Resource Agencies	4/25/2012	All of the alternatives can be designed to have a positive effect, but they can similarly be designed to have serious showstoppers from permitting and tribal concerns. We need to keep in mind the opportunities to do more good.	Yes we always must look for opportunities to do more good however when Tribal concerns or permitting agencies put fish before the safety of people then they are not doing anybody any good.

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98.	Environmental Resource Agencies	4/25/2012	Can we have an alternative that only addresses the impacts at Sterling and Nookachamps? How do we do economic analysis for the benefits to an area when it would otherwise be cost ineffective . Do we need to provide something for everyone?	Alternative Two will address the man-made problems by the dike districts for the Nookachamp/Sterling area and hopefully Hamilton as well.
99.	Environmental Resource Agencies	4/25/2012	How far we will go with our analysis? There are concerns that we don't have enough time for studies or money.	The Corps has had since 1995 to do this analysis. We do not need to reinvent the wheel. Most of the issues have already been covered and do not need further paralysis by analysis.
100.	Environmental Resource Agencies	4/25/2012	Another fatal flaw is that the Corps is focusing on ESA, etc, but not as much on the tribal trust responsibility and how this is going to be handled in the planning and review process.	The Tribal Trust responsibility does not trump the responsibility to all citizens.
101.	FCZD Meeting	4/16/2012	No one north of the dike will find the Joe Leary Bypass acceptable?	This is very true since the water does not go between Burlington and Sterling Hills. See 12/1982 <u>Dames & Moore Report, Dames & Moore Map, 1995 Graphic Summary of Increases in 1990 Flood Levels Due to Levee System.</u>

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102.	FCZD Meeting	4/16/2012	Will the environmental community find the Joe Leary Bypass acceptable?	After reading the comments by the “Environmental Resource Agencies and the Aquatic Resources Group which BTW are composed of a lot of the same people and many are not “agency” people, these are the same people who threw Skagit County land owners under the bus when it came to more storage behind Baker dams and as evidenced by their continued efforts in trying to keep that storage from happening I am at a point where I really don’t give a damn what they think. It is clear that they are motivated to anything other than public safety.
103.	FCZD Meeting	4/16/2012	Has the Corps studies what will happen once the floodwaters is emptied into the Swinomish Channel? Does the channel have enough volume to hold the flood water?	Project has been looked at since 1922. I don’t think anyone has ever put to writing an answer to the question. See <u>Avon Bypass Issues Page</u> .
104.	FCZD Meeting	4/16/2012	Did you know that there is a hotel located in the proposed Swinomish Channel floodway?	There are lots of structures located within the floodway (i.e not in the Bypass.) The two are different.
105.	FCZD Meeting	4/16/2012	Is there an issue with the jetty on Goat Island? Has the Corps looked at this?	See <u>1979-06 Skagit River Levee Improvement Public Brochure</u> and <u>1978-03-22 Public Hearing Transcript</u> .
106.	FCZD Meeting	4/16/2012	For the ring dikes, what would happen if the levee broke? You would get a bathtub - how will you drain this area?	Excellent question and a great reason not to build ring dikes.

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107.	FCZD Meeting	4/16/2012	There is a choke point in the river system at the North Fork Bridge	Comment noted. There are “choke points” at all bridges over the Skagit. This is one reason why trying to setback the levees for the whole system would be cost prohibitive.
108.	FCZD Meeting	4/16/2012	When will the Corps have costs?	After we have expenses due to a large flood event.
109.	FCZD Meeting	4/16/2012	What will happen if the costs are really high?	Nothing not that anything is going to happen anyway except cost the taxpayers 13 million dollars for a study that will sit on a bookshelf and gather dust due to special interest wanting everything for nothing.
110.	FCZD Meeting	4/16/2012	What will be the efforts of the economist?	
111.	FCZD Meeting	4/16/2012	How is the cost benefit ratio developed?	
112.	FCZD Meeting	4/16/2012	Will the 3 year schedule also include the EIS? How detailed will the EIS be?	Yes. Depends on your definition of detail.
113.	FCZD Meeting	4/16/2012	The Environmental Committee has good knowledge and can help with the study.	This would be the same “Environmental Committee” that hasn’t contributed anything to the SCFCZD meetings.
114.	FCZD Meeting	4/16/2012	When will the Corps confront ESA issues?	They will try but given the total lack of effort by FEMA don’t expect much from the Corps.
115.	FCZD Meeting	4/16/2012	What are the benefits to wildlife/salmon?	Fish will stay in the river and wildlife won’t drown during a flood.
116.	FCZD Meeting	4/16/2012	How will environmental impacts be considered in the Corps analysis?	They will use NEPA and their regulations to guide them. Any “special” additional studies should be financed and conducted by the special interest who are demanding them..

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117.	FCZD Meeting	4/16/2012	What does a flood event look like without flood fighting?	Depends on the size of the flood event.
118.	FCZD Meeting	4/16/2012	What is the difference between a floodway and bypass?	A floodway is a designated land area set aside for the passage of floodwaters. No fill or other obstructions are allowed in the floodway. A bypass is a structured system that guides the floodwaters in a certain direction.
119.	FCZD Meeting	4/16/2012	The Joe Leary floodway area needs to be increased, Need to delete the floodway area underneath the levee.	The Joe Leary floodway is a project that will never be built. The floodwaters do not go in that direction naturally.
120.	FCZD Meeting	4/16/2012	How much water will be passed through the bypass/floodway?	40 to 60 to 80,000 cfs depending on whose hydrology you apply.
121.	FCZD Meeting	4/16/2012	Will the floodway/bypass have water in it throughout the year?	No.
122.	FCZD Meeting	4/16/2012	Where will the spill into the bypass occur and at what elevation?	If it is designed properly somewhere between the BNSF bridge and the Avon Bend.
123.	FCZD Meeting	4/16/2012	How frequently will the floodway/bypass be engaged?	Again, depending on its design, in the last 88 years it would have been used twice if you "assume" that it would not be used for any flood below what the gages read in 1990 or 1995.
124.	FCZD Meeting	4/16/2012	Will the scale of the improvements be based on the hydraulic model?	The Corps hydraulic model yes which also means 2-3 feet of freeboard or 2-3 feet above the 100 year flood level.

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125.	FCZD Meeting	4/16/2012	What is the impact of the Burlington Northern Railroad Bridge on the flows during a flood event? Are you aware of a past lawsuit regarding the bridge?	That issue is being looked at by nhc which previously look at the bridge and determined that the bridge has little if any impact on hydraulic flow amounts. See <u>Testimony in 1997 Halverson et. al. VS. Skagit County et. al. RE: Impacts of BNSF Bridge</u>
126.	FCZD Meeting	4/16/2012	Will the Corps assess interior drainage?	Not sure of the scope and depth of the assessment but they will.
127.	FCZD Meeting	4/16/2012	Has the Corps looked at the Phillips and Williams study which outlines the paths of water?	I've never heard of the Phillips and Williams study. Would very much like to review it.
128.	FCZD Meeting	4/16/2012	Will there be cross integration of the alternative?	If this question is intending to ask could we take some of one alternative and combine with another then the answer is yes.
129.	FCZD Meeting	4/16/2012	Non-structural measures should be part of every alternative.	Absolutely. Alternative #2 should be the project that all other projects would include.
130.	FCZD Meeting	4/16/2012	The community can really help with narrowing the alternatives.	Considering that these 309 comments were made by no more then 75 people and the Corps has only received 15 written comments it would appear that "the community" doesn't really care nor believe that anything put forward will pass a vote of the people.
131.	FCZD Meeting	4/16/2012	I would like to see 100yr protection for the urban areas and no less than existing protection for the upstream and downstream areas.	I wonder if this is because some dike districts (one in particular) has illegally raised its levees above the 50-year level.

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132.	FCZD Meeting	4/16/2012	What about Fir Island?	What about it? Fir Island residents suffer severe flood damage because upstream dike districts are sending a minimum of 6 feet of water down the artificial man-made channel. Like property owners upstream of the levees they are forced to take other peoples water. This should not be allowed in any civilized society.
133.	FCZD Meeting	4/16/2012	The FCZD would like to have a workshop with the Corps to discuss alternatives.	They did.
134.	FCZD Meeting	4/16/2012	How will the Corps determine what work needs to be done to determine the feasibility of the bypass?	They would determine how much water is involved and then figure out what it would take to contain it.
135.	FCZD Meeting	4/16/2012	How far into the 3 year schedule are we?	At least a year.
136.	FCZD Meeting	4/16/2012	People want to know the study process. When can we engage in the process? Will the Corps look to the County's technical subcommittee's for assistance?	People have had the chance to be engaged in the process and they have only sent in 15 written comments as of December 2012. No letters were presented by any of the technical committees who meet so infrequently that it is hard to remember that they are there.
137.	FCZD Meeting	4/16/2012	The Corps should use the technical sub-committees as a resource	The "technical" sub-committees have contributed nothing to the FCZD committee so what makes you think they would do anything for the Corps especially since some of their members are also on the Aquatic Resource and Environmental "Agency" groups.
138.	FCZD Meeting	4/16/2012	Environmental Committee and all the committees need to have the opportunity to look at the alternatives.	And after the committees meet they should submit a copy of their analysis and recommendations to the FCZD AC for acceptance or rejection and/or further action.

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139.	FCZD Meeting	4/16/2012	The Corps should engage with the Flood Control Zone District Advisory Committee more.	This is really all the FCZD AC does anymore. They meet, listen to where the County and the Corps are at on the study and then they adjourn without taking any action at all. The committee has no sense of leadership or seemingly a desire to accomplish anything on its own. It is the same kind of flood committee that the County has had in the past. Sit and listen but won't do anything.
140.	FCZD Meeting	4/16/2012	Can the County's/subcommittee's help be used as WIK? The FCZD Committee would like their work to be counted as WIK.	What work? The committee cannot point to one thing that they have completed. No recommendations have been made to the county Commissioners, no further progress on the CFHMP. Nothing. Not a single task that the committee was charged with has been completed by the committee.
141.	FCZD Meeting	4/16/2012	When will we get a FEMA map?	Have no idea.
142.	FCZD Meeting	4/16/2012	What does the Corps need to know from the FCZD?	If the committee had any degree of leadership which it currently does not have the committee would follow up on this question by sending a letter to the Colonel on behalf of the committee and request a formal written response.
143.	FCZD Workshop	5/21/2012	Does alt 1 include the ongoing improvements that the levee system?	Alternative 1 is to do nothing so I'm not quite sure how to respond to the question.
144.	FCZD Workshop	5/21/2012	Cattle mounds are non-structural	Yes they are and any area that is subject to induced flooding should be provided with them.

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Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
145.	FCZD Workshop	5/21/2012	We need interior drainage once the floodwater gets in.	Interior drainage should be the focal point of the GI study under existing conditions along with Alternative #2.
146.	FCZD Workshop	5/21/2012	Alert warning systems – we are currently limited in our capabilities – audible alarm system, telephone system, door to door.	The County/Corps should develop an Emergency App for that.
147.	FCZD Workshop	5/21/2012	Evacuation routes and shelters. No evacuation plan for West Mount Vernon, shelter at the airport. Mount Vernon has no marked routes. Burlington has some marked evacuation.	Burlington’s marked routes are all subject to inundation. Emergency Services personnel appear to not know at what gage readings certain roads will go underwater.
148.	FCZD Workshop	5/21/2012	Interagency coordination for state troopers. People stop to look at the water when crossing the bridge.	I-5 is one of Burlington’s emergency routes. It needs to be shut down during emergency situations. Highway 9 needs to be elevated in order that it can be used as the emergency alternative.
149.	FCZD Workshop	5/21/2012	How does Corps deal with this alternative? How does the Corps execute non-structural alternatives?	House by house. Each would be a little different.
150.	FCZD Workshop	5/21/2012	We need early warning system for the upper valley. (Marblemount down).	And you should have that. I’m not so sure what you have upriver with respects to electronic capabilities but at a minimum there should be siren alarms installed.
151.	FCZD Workshop	5/21/2012	When we drive over the Kincaid Bridge the elevated water levels are visible – there could be visual markers (education and outreach).	There should be markers set in visual locations with respect to past flood events. It would also help keep people from building in areas that they shouldn’t be.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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152.	FCZD Workshop	5/21/2012	We need an up system Doppler weather forecasting system.	Where?
153.	FCZD Workshop	5/21/2012	We should look at watershed management particularly on public lands. We should try to do something to keep the water up the valley	Really? What would you suggest?
154.	FCZD Workshop	5/21/2012	We should look at changing logging practices.	Shouldn't we first decide what is wrong with the current practices before we start making things harder for the loggers.
155.	FCZD Workshop	5/21/2012	Does Cockreham Island include removal of the levee? Studies have shown that this levee induces flooding on Hamilton.	To my knowledge there are no plans being actively pursued to remove the levee, however I have never understood why all of Skagit County is forced to pay for the levee. It is true that the levee impacts flood levels in Hamilton.
156.	FCZD Workshop	5/21/2012	Non-structural suggestion: all the homes in harms' way should have it written in the deed of the house that says that they live in the floodplain.	Bravo. This suggestion is long overdue and should be enacted by the state legislature. Living in a floodplain is clearly a defect in the property that any potential buyer should be made aware of.
157.	FCZD Workshop	5/21/2012	You will find this unacceptable to anyone above the dikes, unacceptable to the residents of the Samish. By the time that you get the water into the bypass, you've raised the water levels too high in Sterling.	This is the same project that was proposed in 1979. It did not pass then and it will not pass now. See <u>1979 Levee Project Issues Page</u>

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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158.	FCZD Workshop	5/21/2012	Samish River community will not tolerate the induced flooding. You would need to buy flowage easements.	No one I have spoken to wants a flowage easement and they don't want the water. Forcing the water onto someone's property is a lot different then just letting it go where it is going to go anyway once the levees break.
159.	FCZD Workshop	5/21/2012	There is a county drainage group. We would need to figure out how to get their drainage incorporated into the Joe Leary Slough.	As previously stated drainage should be the focus of the GI. The Joe Leary Slough project doesn't pass the smell test.
160.	FCZD Workshop	5/21/2012	This alternative doesn't need modification of the three bridge corridor – bridge modifications may cost more (6 bridges) then the bypass may be cheaper.	Spoken like a tried and true "Dike Guy". The DD's 12 & 17 created a huge problem along with the WSDOT and the railroad and they don't want to correct it. Not only should they correct it they should be forced to pay for it themselves. Cheapest is not always the best solution.
161.	FCZD Workshop	5/21/2012	You have to distinguish between the two bypasses – how are these going to be made differently than the ones created in the past. We need to look at the impacts.	Comment noted and yes we need to look at the impacts.
162.	FCZD Workshop	5/21/2012	This alternative could be of benefit as long it's triggered to flow before it backs up too much. People in Sterling don't realize that without this, their levees will be very substantial because water will pool up here.	Not quite sure what alternative the commenter is talking about. Could apply to 3 bridge corridor, Swinomish or Joe Leary Slough.

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163.	FCZD Workshop	5/21/2012	We have looked at bypass concept but we have never looked at the floodway bypass. The floodway bypass idea would re-nourish the soil in the floodplain.	Many documents on www.skagitriverhistory.com reference where the water goes which should be designated as floodways.
164.	FCZD Workshop	5/21/2012	It is interesting to see how the County roads follow the floodways. There is an opportunity for the County roads to cost effectively become flood weirs without take of farmland. Opportunities to use existing road alignments.	If we could get the water past Burlington and I-5 and get rid of it before it gets to Mt Vernon we could raise HWY 20 to keep the water from getting into the Samish Basin.
165.	FCZD Workshop	5/21/2012	This is impossible without a bridge modification	So modify the bridges Dike Guy. You and the owners of the bridges created this condition so man-up and pay for it.
166.	FCZD Workshop	5/21/2012	If you do this, then you must have a ring dike around La Conner.	LaConner is under the "Screw You Jack" philosophy and they are building on their own. However if they want help they should surely get it.
167.	FCZD Workshop	5/21/2012	Bypass blocks hwy 20. There will be no north south traffic; it would be cut off by the floodway.	The Bypass would not block Hwy 20. The floodway would block Hwy 20. Unless of course Hwy 20 was raised.
168.	FCZD Workshop	5/21/2012	There is already a dike around La Conner.	My understanding is that it has a hole in it. Maybe Jack fixed it but I haven't heard that.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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169.	FCZD Workshop	5/21/2012	All you are doing is building the floodway into the Samish. You are forcing water into the Samish. Water doesn't naturally go between the two hills. No Action ends up being a better option for the Samish people.	This was my comment. Doesn't need a response. Speaks for itself. See <u>Dames & Moore Map</u>
170.	FCZD Workshop	5/21/2012	Burlington got themselves into their mess. Is flood control the reward for poor urban planning?	Ditto.
171.	FCZD Workshop	5/21/2012	West Mount Vernon: Looks like a levee setback. How are you going to get memorial rd and McClain road over that back levee?	Not sure. Above my pay grade.
172.	FCZD Workshop	5/21/2012	There are two major trucking companies in West Mount Vernon.	Maybe they should move to Sedro-Woolley.
173.	FCZD Workshop	5/21/2012	Seems like Alternative 5 may be skipping the step of interior drainage	Hopefully not and like Alternative #2 interior drainage should be part of all alternatives.
174.	FCZD Workshop	5/21/2012	Should be more than three bridges here – should be 6 proposed bridge modifications.	If you get rid of the water before it gets to Mt. Vernon there is no need to modify any other bridges.
175.	FCZD Workshop	5/21/2012	West Mount Vernon there is a bypass channel. Are you proposing to replace the Division Street Bridge?	I don't think the Corps is planning on doing that however to be honest I don't know for sure. Between the dike districts and the county staff I'm not sure they are looking at anything other than flooding the Samish. See <u>Letter to Corps fm Skagit County Dike District #17.</u>

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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176.	FCZD Workshop	5/21/2012	Division Street Bridge should be looked at.	For what purpose?
177.	FCZD Workshop	5/21/2012	Setback depending where they are will fill up with sediment. What is the lifetime of levee setbacks? (ALT6)	I don't see a problem here. What do you do with the sediment left behind under current conditions? So long as the current set of levees is removed why would the condition be any different?
178.	FCZD Workshop	5/21/2012	The main problem of the levee setback is that you are going out to build a new levee foundation on a soupy foundation. (ALT6)	And you think that the current levees are not built on a soupy foundation? See <u>Neal Hamburg May 1992 Testimony Before Joint Select Committee on Flood Damage Reduction.</u>
179.	FCZD Workshop	5/21/2012	Is there a cost analysis associated with capturing the costs of improving the levees?	At this time they don't have which levees will be improved so I doubt they have cost figures yet. However using the 1979 project as a guideline which according to 5/29/2012 <u>Letter to Corps fm Skagit County Dike District #17</u> , is pretty much what this project is turning into, factoring in inflation the cost of levee improvements would be \$167,000,000. Local cost would be approximately 58,450,000. So a good guess at levee setbacks would be well in excess of \$200,000,000 with the cost of easements for new levees entirely the local government's responsibility.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
180.	FCZD Workshop	5/21/2012	If Mount Vernon finishes the flood wall, then the benefits resulting from this improvement cannot be counted towards the GI, correct?	The answer to this question is yes which would change the cost benefit ratio for the rest of the floodplain. But both Mt. Vernon AND Burlington don't seem to care about that and have pretty much told the County to go to hell so drumming up support to help them will be difficult at best.
181.	FCZD Workshop	5/21/2012	If there was no action – what is the cost of damages?	Depends on the size of the flood and where the levees break.
182.	FCZD Workshop	5/21/2012	What about Burlington? Does the Corps account for inflation/appreciation?	Certainly, how do you think they get those extraordinary cost benefit ratios?
183.	FCZD Workshop	5/21/2012	County citizens want to know how much the damages are and how much we will save if we are asked to pay. The citizens need to see the economic damages. IN addition to assessor's information, this probably doesn't include government infrastructure, cost to rebuild levees, the cost to rebuild the pipelines, and costs associated with Olympic pipeline shut down.	The citizens also need to be told how much people behind the levees will benefit i.e. higher land values (which mean higher taxes for those government employees), decreased flood insurance payments if any payments at all, and will the flood plain residents be paying the same amount of taxes for the flood project as the people on the hill. Oh yeah and will the Dike Districts sign an agreement that they will not lower their assessments so the residents in their districts will not be paying any more than they do now. Also will they sign an agreement that they will not make any nonsense arguments like double taxation thus having their residents opt out of the responsibility of paying their share. Having the answers to those questions would go a long way towards helping sell the idea of flood risk reduction.

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184.	FCZD Workshop	5/21/2012	How does the Corps calculate damages?	I will find you a document that explains it and change this answer when I do.
185.	FCZD Workshop	5/21/2012	Don't just think damages in the flood plain but also damages to the Islands. And the loss of the/economic impact of road closures.	You should have thought about that before you moved to the Islands.
186.	FCZD Workshop	5/21/2012	What types of things can the Corps pay for? (non-structural items)	I will find you a document that explains it and change this answer when I do.
187.	FCZD Workshop	5/21/2012	Building a levee for ALT3 would be extremely expensive. We need to consider cost.	Yes, cost is very important. See response to question # 179.
188.	FCZD Workshop	5/21/2012	Surely there are cost estimates from WSDOT on Centralia from their flooding shutdown. (ALT3)	The Corps in 2004 estimated that the cost of shutting down I-5 at 3.4 million dollars per day and a 100 year flood would shut down the freeway for 4 days. Source: February 29, 2008 <u>Flooding in the Chehalis River Basin: Synthesis</u>
189.	FCZD Workshop	5/21/2012	Some of the housing areas that look new are really quite old. (ALT 4)	If they are 1921 or older homes then they probably have had water in them in that location. Depends on how high they are built off the ground.
190.	FCZD Workshop	5/21/2012	We need to look at the potential cost of levee setback/three bridges mod and the bypass. ALT4	Yes that is what this process is doing.

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191.	FCZD Workshop	5/21/2012	But with the floodway, you could open it up earlier, let the water go out soon. ALT4	The statement was made to show that timing on when the floodway gates would be opened would depend on the flood conditions.
192.	FCZD Workshop	5/21/2012	If there are going to be coal trains going through – it seems like one of the conditions is that you should plan for is building a new bridge ALT4	The BNSF railroad should build the new bridge and if WSDOT would do their job they would let BNSF know that the State, the DD’s and the cities will hold them responsible for damages to their levee systems and roads due to the bridge redirecting flood flows.
193.	FCZD Workshop	5/21/2012	We need to realize the impact of a 100 yr flood but we have to look at the impacts on the economy – we all pay the price collectively. The flooding that affects Burlington not only affects Burlington but it affects all of us. (ALT 5)	Burlington has known of the flood danger and chose to ignore it in order that they could create a good economy for themselves. See August 22, 1978 - <u>Burlington Mayor Letter to Corps of Engineers re Flood Project Alternatives</u> . Thus the damages are man-made not an act of God – please see September 2006 Angry Citizen: <u>The Realities of Flood Control in Skagit County</u> . This lame argument was tried in 1979 and soundly rejected – see <u>Corps of Engineers 11/26/1979 MFR re election results</u> .
194.	FCZD Workshop	5/21/2012	Will cost of mitigation be included in project cost? ALT6	Certainly, where do you think the money will come from for the mitigation, TNC, Swinomish, NRCS?

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195.	FCZD Workshop	5/21/2012	Biggest environmental issue is the flow of sediments. We have lost a lot of sediment inputs in the estuary, the bypasses, may put a lot of sediment into Padilla Bay and starve the Skagit of sediment.	Really? Moving volcanic soil sediment is the biggest environmental issue? Wow, someone should have told the Aquatic and Environmental “agency” people that because that is something they never brought up. If you would buy into the floodway concept instead of the bypass you would find that the sediment would be deposited onto the floodplain which of course is what the floodplain is composed of.
196.	FCZD Workshop	5/21/2012	What are the dangers for the eelgrass sedimentation in Padilla Bay? (ALT3)	First alternative #3 would not go to Padilla Bay. Sedimentation might be a problem for eelgrass once every 88 years however I have to think that eelgrass like any other weed would find a way to grow back. I would have to check on the sustainability of eelgrass beds. One thing I have never understood is if eelgrass is so important why aren’t the enviros treating it like a crop and calling for planting more of it. I’d be happy to help with that effort.
197.	FCZD Workshop	5/21/2012	Just south of hwy 20 along the channel, you have the braided remnant of the Swinomish slough. This area is a high priority area for the County to look at. This is Telegraph Slough. ALT4	Comment noted and agreed to so long as your comment is in relation to environmental enhancement or wetland mitigation banking.
198.	FCZD Workshop	5/21/2012	In a hundred year flood, the water goes through Gages Slough, then goes through Burlington (in no action scenario).	See Floodway Issues Page

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199.	FCZD Workshop	5/21/2012	No water goes through the two hills because there is high ground – then it goes into Joe Leary Slough. Then assuming that if a levee breaks then the floodwaters goes all over the place. (in no action scenario)	This is another example that not all that the Corps thinks they heard is correct. I made this statement and what I said is that the water does not go between the two hills because of Gages Slough which carries the water out to Bayview Hill and then splits to Padilla Bay and into Joe Leary Slough. See also <u>Graphic Summary of Increases in 1990 Flood Levels Due to Levee System; Memorandum for Record re Dames & Moore Study; Dames & Moore Report; Dames & Moore Map</u>
200.	FCZD Workshop	5/21/2012	Were the alternatives designed for a probable event?	My understanding is that the Corps will use a 100 year flood however we as project sponsors can request a lower level of risk reduction.
201.	FCZD Workshop	5/21/2012	Whenever the Skagit is at flood stage, the Samish is also at their flood stage so that area is already getting a lot of water.ALT3	Evidently the County staff at the public hearing was under the impression that the Samish would be done “flooding” by the time the Skagit River floodwaters would reach the Samish Basin. I couldn’t believe what I was hearing. Just because a river has crested doesn’t mean that the floodwaters magically disappear. In some locations depending on the subsoil’s it stays there for weeks.
202.	FCZD Workshop	5/21/2012	In the government land survey, the low point is the Olympia marsh. The Water would probably go through the Olympic marsh. ALT3	Please see <u>1897 Corps of Engineers Map</u> showing the location of Beaver Marsh & Olympic Marsh wetlands.

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203.	FCZD Workshop	5/21/2012	When the river was blocked with logs, then it went to Beaver Marsh and Olympic marsh. (ALT 3)	And it will go there again with or without any flood risk reduction project.
204.	FCZD Workshop	5/21/2012	How long will the water be on the property of people who are behind the sea dikes? (ALT3)	In the past it has been 2 to 4 weeks. See <u>J.O. Rudene, Skagit County Property Owner Testimony for 11/26/1924 Hearing</u>
205.	FCZD Workshop	5/21/2012	Key to interior drainage is velocity. Want to have very slow velocities. (ALT 3)	The larger the area is that the flood waters have to spread out on the lower the velocity.
206.	FCZD Workshop	5/21/2012	ALT 4: Looking at the map at the back of the handouts, water will flow through farmland and to Swinomish Slough and it will go right through a row of houses from McClain road and go straight and then turn right and then there are a row of houses on a levee.	In the back of everyone's mind while analyzing any of the alternatives should be what is the alternative. Having the water go through the City of Burlington and shutting down I5; waiting for someone else's levee to break (because that is the game you are playing now) which is the do nothing alternative.
207.	FCZD Workshop	5/21/2012	How do we know what direction the water exiting the bypass would flow? (ALT 4)	Wouldn't this question be determined by the tides?
208.	FCZD Workshop	5/21/2012	Lots of rip rap in the river – removal of the rip rap would allow Nookachamps and Sterling to increase conveyance. We should also remove the of rip rap from the railroad – there is a lot of rip rap here. (ALT4)	Removal of the riprap would increase erosion of the riverbank. Removal from the railroad would endanger the bridge and the tracks so besides damages what would you be increasing?

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209.	FCZD Workshop	5/21/2012	Lots has been said about storage in Nookchamps and Sterling. There is less and less storage in this area. (ALT 5)	This is due to poor drainage. The further away you get from the river the more water is left standing as some areas have become oversaturated with water.
210.	FCZD Workshop	5/21/2012	I live in the Nookachamps, I have standing water on 800 acres that has been there for the last 5 years. I don't know where the water will go. ALT5	The area this farm is located in used to be wetlands. See <u>Original 1866 Lower Valley Map.</u>
211.	FCZD Workshop	5/21/2012	The Corps has been telling us to setback the levees, but the advantage of keeping the levees at the edge of the river makes the river travel faster and scour out the bottom of the levee. (ALT6)	This is a true statement (with the exception that what the gentleman said was it will "scour out the bottom of the river", not the levee although without riprap it would scour out the bottom of the levees toe. The further away from the edge of the river you place the levees the slower the river will travel. Every plus side has an equal minus side.
212.	FCZD Workshop	5/21/2012	Does this have a set of options such as the interior levees in Fir Island or like the other overland flow options would you create too much flow. Maybe we still need to talk about flowage easement. (ALT6)	Given the Supreme Court <u>Decision</u> referenced above I think a flowage easement would be a necessity for any option that would induce flooding on anyone's land, however keep in mind that the cost of the easement would be the responsibility of local government, not the Corps.

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213.	FCZD Workshop	5/21/2012	Do you count tides in the hydraulic model? ALT6	This statement was not made with respect of any one alternative as the Corps has put forth. It was intended to cover all alternatives, even the do nothing alternative #1. Are the impacts of tides calculated in either the HEC-RAS or Flo-2D models? Is there a model that would take into account the tides? It has been put forth that the duration of a flood could be due to the impact of tides holding up the flow of the Skagit River. Is this true? Logic would say yes but I don't have a scientific answer.
214.	FCZD Workshop	5/21/2012	flo2D hydraulic model. Where is it? (ALT 6)	Have no idea what the Corps person who wrote this comment heard and thus have no idea how to respond.
215.	FCZD Workshop	5/21/2012	However, your predecessors have told us the reason you can't move back the levees in West Mount Vernon is because West Mount Vernon put a garbage dump there. ALT6	The location of the old MV dump, was in fact discussed many times during the 1979 hearings. We were told that because of the dump the Corps could not widen the river at that location and any cost associated with the environmental cleanup of that area would be up to local government.
216.	FCZD Workshop	5/21/2012	Burlington old dump didn't have anything in it because it was all organics – no plastics back then. (ALT6)	Actually plastics were invented/discovered in 1839. PVC pipe in 1872 and in use in 1926, Cellophane in 1908. My understanding is that the dump in Gages Slough in the location of the trailer park was in use in the 1950's so we really don't know what is in that dump. Certainly tires and farm chemicals were around in the 1950's.

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217.	FCZD Workshop	5/21/2012	What if the plans don't operate the way we plan? ALT4	Then the Corps of Engineers brings its Wash. DC headquarters delegation to the site and says, "Whoops." Kind of like they did in New Orleans.
218.	FCZD Workshop	5/21/2012	What is the Corps stance on ring dikes? (ALT 5)	Regardless of what the Corps "stance" is ring dikes/levees are nothing more than expensive bathtubs. Levees in general are the worst form of flood control you can have.
219.	FCZD Workshop	5/21/2012	For this alternative, do you need to do a survey? ALT6	If in fact this comment was made with respect to alternative #6 and the word survey was used in the context of a land survey then the answer is a very obvious yes along with an check of all deeds in the area for current ownership and easements.
220.	FCZD Workshop	5/21/2012	You will put two tribes against each other. ALT3	One of the major concerns expressed in the past is that if you put in a "bypass" i.e. a channel, that the salmon would then belong to the Samish Tribe and not the Swinomish. However designating floodways where the water flows out onto the floodplain much the same as it did naturally then that issue would not be much of a player. The more we can return to natural process the smaller the fish issue becomes.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

With LJK Comments 12/31/2012

Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
221.	Hall	5/1/12	"Alternative 2:Non-Structual and Dam Modifications" is a map that does not seem to explain what exactly the these modifications are. Do these include the "Operational modifications to Upper and Lower Baker Dams" and if so: 1. What exactly are these modifications? 2. What are the steps to get these procedural modifications adopted and implemented? 3. Overall in terms of efficacy, where do the dam procedural modifications fall on a scale of 1-10 with 10 being the most effective? Alternative 5 slides speak about urban area protection though doesn't seem to address the highest density areas.	<p><u>E-mail to Corps fm Eric Hall</u></p> <p>1) Modifications without construction could include additional storage behind Upper and Lower Baker dams; moving up the storage schedules from November to October; to deciding when is the best time to dump the water (that last one will probably have to be determined on a case by case basis but protocols could be put into place as guidance).</p> <p>2) Modify the water control manual.</p> <p>3) 11</p> <p>4) Highest density areas are Burlington and Downtown and West Mt. Vernon.</p>
222.	Hall	5/1/12	What determines when and where structural modifications are offered as an alternative?	A vote of the people.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

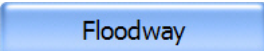
With LJK Comments 12/31/2012

Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
223.	Hall		Where do the data come from for the brown and light brown population density regions on the map? The Nookachamps area inaccurately identifies river bank area as highly populate while densely populated areas are not noted at all. I speak specifically to the south end of Francis Road.	The area you question is within the Mt. Vernon City limits.
224.	Hall		Is there a long-term timeline that takes flood management in Skagit County through to alternative adoption and implementation?	2015. See page 5 <u>Corps of Engineers Presentation Skagit River General Investigation Preliminary Alternatives.</u>
225.	Hall		Who is the responsible government agency that makes the final decision regarding which alternative to adopt?	The Corps of Engineers in cooperation with the Skagit County Commissioners. Final approval will be decided by the voters of Skagit County.
226.	Helton		Concerned whether or not proposed levee heights will sufficiently consider the impacts of sea level rise.	<u>Comment sheet to Corps fm Bob Helton</u> This issue needs to be addressed in the DEIS.
227.	Helton		Would like to see B/C ratios.	Wouldn't we all however given the fact that Burlington and Mt. Vernon have allowed so much irresponsible commercial development in the floodplain it would not surprise me that there is no project that will not meet Corps standards for an adequate Benefit to Cost ratio.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

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Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
228.	Helton		Concerned that plans may not be following the Draft Executive Order on Floodplain Management.	Actually Bob Helton asked the question “What’s happened to the Draft Executive Order on floodplain Management dated 5/10/2009.” We first published the draft executive order on 7/24/09 <u>Draft Executive Order of Obama Administration for Floodplain Management.</u> According to the White House web site this EO is one of the few that the President has not yet acted on. <u>See http://www.whitehouse.gov See also http://www.whitehouse.gov/blog/2012/07/06/no-can-be-good-thing</u>
229.	Henckle		Prefer Alt 3- their property would be in the flood area in Alt 4.	<u>Comment sheet to Corps fm Don Henckle</u> Water traveling in this area is where it historically has went. Letting it go there makes more sense then forcing it into the Samish. Doesn’t create the legal problems that Alternative 4 will cause.
230.	Henckle		Alt 4 will flood their property – like this the least.	NIMBY. I absolutely understand your feelings having been a victim of Dike 12 and 17 for several years of my life however the truth of the matter is the area your house is located in should have been designated as a floodway way back in 1921 i.e. it never should have been built. Perhaps you would accept a buyout? See 

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
231.	Henckle		Should consider dredging the Skagit Channel.	The Skagit was never dredged, it was sidecast. Dredging will not work and even if it would it would be cost prohibitive. See Dredging
232.	Henckle		Like the Fir Island Bypass.	Fir Island Bypass is good for fish however doesn't do much for flood relief and divides Fir Island into two bathtubs.
233.	Henckle		Would like to see improved flood protection.	Because he didn't like being evacuated from his house.
234.	Hudbom		Sedimentation at the mouth of the river is an issue that should be considered.	Sedimentation at the mouth of the river does not impact flood levels. Tides impact flood levels.
235.	Knutzen, B		Least prefers Alt 3 (Joe Leary Slough Bypass) – it would be devastating if flooding in both the Skagit and Samish happen simultaneously.	The Corps in response to my FOIA request did not present written comments for Mr. Knutzen so I have no idea if his comments are his or the Corps. Mr. Knutzen is absolutely correct. The whole Joe Leary alternative is never going to happen. It is a ridiculous waste of time and money to even have it looked at.
236.	Knutzen, B		Prefers Alternative 4 (Avon Bypass) and dredging of the lower river.	Again Mr. Knutzen is right. Getting the water past Burlington and I-5 and getting rid of it before it gets to Mt. Vernon has always been the solution.
237.	Knutzen, B		He has observed silt build up in the freshwater sloughs that meet Skagit Bay.	This is true. Also the Corps of Engineers blocked off many of the old sloughs around Fir Island as documented in historical Corps studies.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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238.	Knutzen, B		There was historically a third river (Swoolahmish River, 1859 survey) between the Skagit and Samish Rivers.	The Swoolahmish River is now called Sullivan or Calhoun Slough. It drained a beaver marsh east of the Swinomish Glats and south of the great Olympia Marsh. (Source: Tide Marshes of the United States, Page 69, 1884) http://books.google.com/books?id=mUXOAAAAMAAJ&pg=RA2-PA69&lpg=RA2-PA69&dq=swoolahmish&source=bl&ots=toOMaokctN&sig=zOc5z2rzU9QqhqySuD3atLR7llg&hl=en&sa=X&ei=gjvfULi-AsT6igKt_oDgBA&sqi=2&ved=0CC8Q6AEwAA#v=onepage&q=swoolahmish&f=false
239.	Kunzler, J (comment card)	5/11/2012	Alt 2: is the most favorable alternative. Dam storage is the most cost effective, environmentally friendly flood protection measure. Also need to limit development in floodplain.	<u>Comment Sheet to Corps fm Josef Kunzler.</u> More storage and stricter land use plans are without a doubt the least expensive ways to provide flood risk reduction.
240.	Kunzler, J (comment card)	5/11/2012	Swinomish Bypass has a lot of political controversy	First authorized in 1936. Looked at again in 1966 and again in 2001. See <u>Avon Bypass</u> issues page.
241.	Kunzler, J (comment card)	5/11/2012	Alt 5 coupled with dam storage could be viable if coupled to land-use policies preventing further encroachment on the floodplain.	Flood risk reduction should not be the reward for poor land use planning. Taxpayers should not be expected to pay for irresponsible development by local cities in volcanic floodplains subject to severe earthquakes.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

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242.	Kunzler, J (comment card)		Alternative 6 is unacceptable	The author of this comment meant to say Alternative 1 – No Action is unacceptable, although Alternative 6 will never be acceptable to the local farming community as the Corps has been telling the locals to move the levees back off the rivers edge since 1897. See also 12/11/1897 Capt. Harry Taylor Annual Report.
243.	Kunzler, J (comment card)		Concerned about affordability and effectiveness of the proposed alternatives. There is no point in pursuing study further if the County cannot afford the project or if there are major environmental obstacles.	Funding for any project is a major hurdle that has not been properly addressed by the locals. If they go for a property tax with everyone paying the same amount then it will fail. A sales tax would be much more acceptable. See Plan B Presentation
244.	Kunzler, J (comment card)		For levee setbacks the old levees need to be removed for this to be effective.	Absolutely, without removal of the current set of levees there is no benefit with respect to moving more water downstream.
245.	Kunzler, J (comment card)		Propose that dam storage only be proposed as an alternative.	I believe that dam storage is part of all alternatives.
246.	Kunzler, J (comment card)		Ranking: From most favorable to least favorable: Alt 2, Alt 5, Alt 6, Alt 3, Alt, 4, Alt 1	Alternative #2 takes care of a lot of the man-made problems that cause damages to private property.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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247.	Kunzler, L	5/23/2012	Submitted map developed by Dames and Moore for FEMA. (see file) Maps suggests that in In order for water to flow between the hills you would have to dig a channel between the two hills. Also another problem you are going to face is that FEMA designated the Gages Slough area as an area of "Special Flood Hazard" and "should be" treated as floodways. This would prohibit any building of a levee (i.e. fill in the floodway) in that area.	See Floodway issue page. In particular see also Dames & Moore Map ; Memorandum for Record re Dames & Moore Report ; Dames & Moore Report ; FEMA letter re floodway designation of Gages Slough ; FEMA letter re development restrictions ; FEMA letter re denial of appeal filed on Burlington FIS ; Transcript of Burlington City Council Meeting November 8, 1984 ; USACE MFR Re: Skagit River Levee Repairs .
248.	Kunzler, L	5/23/2012	Submitted 1897 map prepared by the Corps of Engineers. Shows locations of Beaver Marsh area and Olympic Marsh. Also, shows river depths. The river depths have changed little since 1897.	Please see 1897 Corps of Engineers Map
249.	Kunzler, L (comment card)		Alt 2: Prefer this alt. Need to give consideration to flood storage at the dams.	First I would have to refer the reviewer to the actual "comment card". Comment Sheet to Corps fm Larry Kunzler The Corps "summary" does not do justice to the statements made or make any reference to linked documents within the comment sheet.
250.	Kunzler, L (comment card)		Alt 3: Benefits of the Alt are similar to Alt 4. Major disadvantage of this alternative is the potential for mixing of fish species and the potential for increase sheet flow flooding the Samish River Basin if both the Skagit and Samish flood at the same time.	

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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251.	Kunzler, L (comment card)		<p>Alt 4: This bypass idea has been proposed before. It was last considered by the County in 2002. There are significant economic and environmental issues with this alternative. Floodway aspect of this alternative would need an agricultural exemption to allow for construction of agricultural outbuildings and rebuilding of damaged farm houses. Benefits of this alt/floodway version: floodwaters would not impact Burlington or Mount Vernon, would preserve farmland from urban encroachment, prohibit further development in the natural flood corridor. This alternative will likely be the most affordable and provide the most benefits. This alternative will impact fish but this impact can be mitigated. An additional benefit of this alternative would be that Mount Vernon would not need a floodwall.</p>	<p>The single most disconcerting and troubling aspect of my comment sheet is that the Corps refused to address two of the most important questions presented to them. It makes one wonder what else they saw or heard at a meeting and decided not to address. This is why written comments are so much more important than questions they allegedly heard at public meetings.</p> <p>So I ask again: Did the Corps of Engineers use the wrong hydraulic figures in computing the Ross Lake amount of storage and should storage begin in October? (<u>See 8/14/1953 Corps document</u>)</p> <p>And</p> <p>When the Corps changed its computations from Extreme Low Water to Mean Sea Level did the Corps fails to adjust the gage readings appropriately for historical flood events? (<u>See Low Low Water in Puget Sound vs. Mean Sea Level</u>).</p>
252.	Kunzler, L (comment card)		<p>- Alt 5: This alt is not favorable because it overlooks poor land use practices (allowing development) of the floodplain by Burlington and Mount Vernon. Should also construct levees around Clear Lake and Sedro Woolley waste water treatment plant, and stopgap levee for La Conner.</p>	<p>Without those questions being addressed there can be no validity to the NEPA process.</p>

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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253.	Kunzler, L (comment card)		Alt 6: This alt is not favorable because of the proposed levee at Sterling. This levee would add a 3-4 ft of height in flood water level to the Nookachamps area which in turn makes a deep lake upstream of the Burlington Urban Area. Widening of the 3 bridge corridor to allow for increased conveyance would result in higher levee and/or bridge replacement costs.	
254.	Kunzler, L (comment card)		Analysis from NHC indicated that a significant amount of water leaves the system at Nookachamps. Nookachamps is an artificial storage basin because of levee system of Dike 12 and 17. Nookachamps Creek does not contribute any flow into Skagit River into flood.	<u>See Graphic Summary of Increases in 1990 Flood Levels Due to Levee System</u>
255.	Kunzler, L (comment card)		Concerns regarding storage in Lower Baker Dam. An adverse impact of imminent drawdown is that if you fill up the reservoir and a second storm hits, then there will be no flood storage at the dam.	<u>Once again the Corps has shown its inability to properly interpret comments by citizens. And these are written comments not ones they “heard” at a meeting. The concern is that if you drawdown the level of the dams you will fill the overbank areas and then when the second flood hits there is no overbank storage and the second flood is worst then the first. Thus the damages are man-made by PSE, Dike Districts and the Corps not Mother Nature.</u>
256.	Kunzler, L (comment card)		Dredging will not work; however dredging at the mouth of the river may help with drainage of flood properties adjacent to the river during low tide.	

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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257.	Kunzler, L (comment card)		I-5 was designed by WSDOT to overtop from Gages Slough just north of the Target Store and again north of BEHS to Cook Road during a serious flood event.	
258.	Kunzler, L (comment card)		Interior Drainage: This is an absolutely necessary element.	
259.	Kunzler, L (comment card)		Ranking (from preferred to least preferred): Alt 2, Alt 4, Alt 3, Alt 6, Alt1, Alt 5.	
260.	Lefebber, D		Prefers Alt 3- get the water out of the system, ASAP combined with Alt 4 and 5	The Corps of Engineers did not produce a copy of Mr. Lefebber's comments so I have no way of checking if these are really his comments. These comments were submitted by a former commissioner and long time operations manager of Dike District 12. Getting the water out of the system ASAP would mean artificially flooding the Samish River Basin east of Interstate 5.
261.	Lefebber, D		PDT needs to combine the alternatives	This is a good suggestion that should have been done years ago.
262.	Lefebber, D		Stated need to protect public infrastructure and public safety.	Maybe the Dike District should have thought about that before it made the decision not to warn or participate in the City of Burlington's approval of 100's of millions of dollars of commercial development.

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.

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263.	Lefebber, D		Ranking (preferred to not like: Alt 3, 4, 5, 6, 2, 1)	Dike 12 wants to artificially flood the Samish with its share of the flood water. They currently send 6 feet of water towards Mt. Vernon and Fir Island, artificially flood the Nookachamps and Sterling with several feet of water and now they want to flood the Samish. With neighbors like that who needs enemies.
264.	Lefebber, D		Stated the need for the burden of flood control shouldn't fall on a few individuals.	And herein lies the real motivation of the Dike Districts 12 and 17. They want everyone in Skagit County, the state of Washington and America to pay for them flooding other people's property. To pay for their past and current illegal dike activity.
265.	Mount Vernon Public Works	5/8/2012	What about the three bridge corridor?	What about it. Needs to be widened current levees setback and removed and get rid of the water before it gets to Mt Vernon.
266.	Mount Vernon Public Works	5/8/2012	Is there one bridge that make more of a difference or do you need to take out all the bridges?	The BNSF RR bridge is the worst. I would have expected the MVPW dept to know that.
267.	Mount Vernon Public Works	5/8/2012	There are a lot of bridges, the railroad bridge, the Division Street Bridge and the bridges over the forks	That is why the setback levee program will not work, it will be way too expensive. However if you go with the Swinomish floodway you only have to modify three bridges.
268.	Mount Vernon Public Works	5/8/2012	Can you set back the levees without major bridge modification?	No.

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269.	Mount Vernon Public Works	5/8/2012	Does the Corps do bypasses in other parts of the County?	Yes. Huge floodway planned for somewhere in Montana. Also several were used in the Mississippi floods in the last two years.
270.	Mount Vernon Public Works	5/8/2012	Why can't we dredge the river? It has been done in the past.	OMG. Really. That question came from the MVPW Dept.? See section on Dredging . Seriously? See also <u>Historical Dredging On The Skagit River (1920-1966)</u> The river was never dredged, it was "sidecast" meaning they never removed the sediment from the channel. Besides there is no commerce on the Skagit that would justify the expense. If I was the PW's director I would fire whomever asked that question.
271.	Mount Vernon Public Works	5/8/2012	All the alternatives look expensive	They all are expensive. See answer to #179 above.
272.	Mount Vernon Public Works	5/8/2012	I can see mixing and matching different pieces of the different alternatives	Non-structural, dam storage, floodway and levee setback. Yes I can see that as well. I just don't see the voters paying for it.
273.	Public Workshop	5/7/2012	Explain cost-benefit.	For every dollar they spend they must get back more than a dollar saved.
274.	Public Workshop	5/7/2012	One of the problems with dredging was that the Corps would pay the first time and then the sponsor pays maintenance.	Correct.

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275.	Public Workshop	5/7/2012	Both bypasses have sheet flow and channel options. What happens to the value of farmland in the path of the bypass?	If it is only used once every 87 years the value would/should not be impacted. The levees have served their purpose, they have provided a false sense of security for way too long and the argument could well be made that they have artificially inflated the value of the land.
276.	Public Workshop	5/7/2012	Previous options of bypass had 9-10 year levee corridor. I can't imagine what kind of agriculture that can exist in the bypass.	See Avon Bypass . I don't think that you will find a 9-10 year levee corridor in any of those documents.
277.	Public Workshop	5/7/2012	You can farm a bypass but it is not as profitable.	True. There are no levees in the Nookachamps/Sterling area and they farm grass/hay/pasture; wheat; seeds; corn; and during El Nino years potatoes. Can't grow bulbs or strawberries or any winter over crops.
278.	Public Workshop	5/7/2012	I have concerns about limiting the study to three years. Concerned about funding and there are vegetation management issues, ESA consultation. There are lots of things that we can't control. This is too quick.	We will have spent a total of 21 years and 13 million dollars. Enough is enough. Get it done or resign.
279.	Public Workshop	5/7/2012	Are steps being taken to streamline the vegetation management and ESA process?	Don't know.
280.	Public Workshop	5/7/2012	What about dredging the river system?	Really? Again? See section on Dredging . See also <u>Historical Dredging On The Skagit River (1920-1966)</u>
281.	Public Workshop	5/7/2012	Explain what a flowage easement is.	An easement that allows the owner to flood your property. See <u>Flowage Easements.</u>

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282.	Public Workshop	5/7/2012	At the mouth of the river, the biggest problem is silt build-up. There are a bunch of plugged up sloughs. The issue is maintenance of sloughs and sandbars at the mouth. Dredge a few miles of the river and at Sterling would help. The river is full of snags that need to be cleared out.	Dredging the mouth of the river will not help. See <u>Historical Dredging On The Skagit River (1920-1966)</u>
283.	Public Workshop	5/7/2012	Over the life of project, how are we considering sea level rise?	See <u>E-mails to/from Corps/ Swinomish Environmental Policy Manager</u>
284.	Public Workshop	5/7/2012	Why can't we continually dredge the Skagit? They continuously dredge the Mississippi River.	Again with the dredging. There is no commerce on the Skagit. The Mississippi on the other hand over 80-100 BILLION dollars worth of commerce. It pays for itself in jobs and money. See <u>Historical Dredging On The Skagit River (1920-1966)</u> as well as section on <u>Dredging</u> .
285.	Public Workshop	5/7/2012	How is the sheet flow problem going to be defined? Will eminent domain be involved?	First there is no such thing as sheet flow. Certain areas will be deeper and run faster than others, i.e. Gages Slough and any other swale type area. ED will have to be decided by local government and the voters if necessary.
286.	Public Workshop	5/7/2012	Looking at alternatives, I don't see interior drainage.	As previously stated interior drainage should be the focal point of the GI so incase the voters turn down flood control then at least the farmers could build the drainage system themselves and quit wasting their money on levees.

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**Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)
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287.	Public Workshop	5/7/2012	What will tidal influence do to the sheet flow/channel bypass?	Clearly it will back up or at least slow down the flow as it does now in the Skagit.
288.	Public Workshop	5/7/2012	There is only one thing that helps everyone: dam storage.	Correct.
289.	Public Workshop	5/7/2012	You have to be careful as to when you let water down the bypass.	Yes. Correct.
290.	Public Workshop	5/7/2012	Has there been a cost analysis and estimated construction timeline?	No cost analysis yet but will be hugely surprised if anything comes in at below \$200,000,000 with the exception of Alternative #2.
291.	Public Workshop	5/7/2012	Study has gotten harder and time reduced.	How much time do you need? You've had 20 years and 10 million dollars. Did you not accomplish anything in that 20 years for the ten million dollars. Maybe a complete investigation by the GAO is warranted.
292.	Public Workshop	5/7/2012	Suggestion: The outreach is good but it has to be meaningful.	Yes. More than 15 people need to send in letters. Ten million dollars for 15 written comments. That's \$666,000 per written response. Meaningful is a good choice of words.
293.	Sedro-Woolley City Council Meeting	4/25/2012	How will the incoming tide affect the water that moves through the Bypass?	See answer above.
294.	Sedro-Woolley City Council Meeting	4/25/2012	How will Alternative 3 (Joe Leary Bypass) affect Sedro-Woolley	Would stop the ½ foot backup from Dike District 12 that you currently have put into your sewage treatment plant.

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Skagit River Flood Risk Management General Investigation Comment Received (April 2012-June 2012 Outreach)

With LJK Comments 12/31/2012

Comment #	Meeting	Date	Comment	LJK Comments 12/31/2012
295.	Sedro-Woolley City Council Meeting	4/25/2012	What will be done about the houses located in the floodway?	The should be bought out or offered flowage easements.
296.	Sedro-Woolley City Council Meeting	4/25/2012	Did the team analyze the effect of the Samish River Flooding in the Skagit Basin?	No.
297.	Sedro-Woolley City Council Meeting	4/25/2012	Water begins to overflow at Sterling between a 16-20 year event. Sedro Woolley begins flood fight when gage at Mt. Vernon reads 34ft. This is when the river flows across the railroad tracks.	Wrong. 30 to 35 or 50 year event depending on whose hydrology you believe. Without any flood fighting the 34 foot figure might be correct however when the river overflows the RR tracks the river at that level is 40-41 feet.
298.	Sedro-Woolley City Council Meeting	4/25/2012	Why wait until larger events to use the bypass?	Because anything less then that will cause too much of a burden on the property owners in that area. They shouldn't be used until we reach the level of the 1990-1995 flood events.
299.	Sedro-Woolley City Council Meeting	4/25/2012	What about NEPA Issues? Has the team looked at the impacts to the Marine Sanctuary in Padilla Bay?	If you use the floodway concept there should be minimal impacts to Padilla Bay because most of the sediment would be deposited on he floodplain where it belongs. A by-pass would definitely have impacts at least once every 85 years or so based on past floods under current conditions. We need to look into how hard is it to treat eel grass as a crop.

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300.	Sedro-Woolley City Council Meeting	4/25/2012	Where will the bypass/floodway discharge? Will it empty into Padilla Bay? Padilla Bay currently has pollution issues. How will the bypass affect pollution issues in the Bay?	There are two, which one. One will empty into Padilla Bay. What pollution are you talking about?
301.	Sedro-Woolley City Council Meeting	4/25/2012	How much water will be diverted from the River into the bypass?	40-60-80,000 cfs depending on how large the flood is. The By-pass alternatives will probably not be built due to cost and environmental concerns. The floodway concepts have a chance although slight of at least being seriously considered.
302.	Sedro-Woolley City Council Meeting	4/25/2012	This plan will have less impact on Sedro-Woolley (individual opinion)	What plan?
303.	Sedro-Woolley City Council Meeting	4/25/2012	The path of this bypass would affect fewer houses in the city.	Which bypass? Whoever took these notes should be fired.
304.	Sedro-Woolley City Council Meeting	4/25/2012	What do you mean by move-out? Is this a mandatory evacuation before the flood?	Having lived in a floodway fo awhile you really want to consider getting out before the water is walking up your front steps.
305.	Sedro-Woolley City Council Meeting	4/25/2012	Is the Mount Vernon floodwall part of this strategy?	At this time yes.

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306.	Sedro-Woolley City Council Meeting	4/25/2012	Will the Corps buy land that is within the floodway?	No. That would be the responsibility of local government although by designating a floodway it does not require the purchase of property nor flowage easements so long as you are letting it go where it is going to go anyway when the levees break.
307.	Sedro-Woolley City Council Meeting	4/25/2012	What about Hwy 20 and Cook Road? Closure of these roads would trap Sedro-Woolley - people would not be able to evacuate if needed.	There is always Hwy 9 north if you really need to evacuate.
308.	Sedro-Woolley City Council Meeting	4/25/2012	Does the Corps have an estimate of project costs? The biggest cost will likely be real estate.	Nothing firm but don't expect anything under \$200,000,000.
309.	Sedro-Woolley City Council Meeting	4/25/2012	Will the FEMA hydrology be used in this study?	My understanding is that nhc is doing the hydrology work for the Corps.
310.	Sedro-Woolley City Council Meeting	4/25/2012	What about implementation of 107c in the Baker FERC license?	They are working with PSE.
311.	Sedro-Woolley City Council Meeting	4/25/2012	Has the team considered placing a bypass on Fir Island to serve as a third fork of the river?	Don't know if the team has or not but that bypass will only have very minimal effects on flood flows upstream. Would take the pressure off the Fir Island levees put there by the upstream dike districts. It would also help the fish, but Sedro Woolley will receive no benefit from the Fir Island Bypass.

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312.	Sedro-Woolley City Council Meeting	4/25/2012	Do any of the alternatives incorporate management of woody debris in the river?	No, not to my knowledge.
313.	Sedro-Woolley City Council Meeting	4/25/2012	How did the team formulate the preliminary alternatives?	
314.	Sedro-Woolley City Council Meeting	4/25/2012	When does the 50 year project lifetime start?	The day the construction is complete.
315.	Sedro-Woolley City Council Meeting	4/25/2012	Will the project be constructed in phases?	Depends on whose ox gets gourd if they complete one phase and not another and the another suffers increased damages.
316.	Sedro-Woolley City Council Meeting	4/25/2012	How can the City of Sedro-Woolley contribute to this discussion?	Ask questions of your community about what they would support. Ask them if they would mind having their property taxes raised in order to pay for it.
317.	USFWS	6/19/2012	As the Corps drafts the new list of alternatives, we recommend that the Corps promote alternatives that would improve habitat for listed species, anadromous fish, and other species in the Lower Skagit River and its tributaries. Many such alternatives are likely to have positive influences on the ability of the system to convey and/or more naturally attenuate flood flows compared to channelized conditions (e.g., setbacks).	Opening up the old sloughs would help but probably wouldn't make the adjacent farmers happy nor would it have a major impact on flood flows.

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318.	USFWS	6/19/2012	We encourage the Corps to draft alternatives that include promoting setbacks wherever possible, appreciable restoration or enhancement of functional riparian corridors, restoration and/or construction of high quality and fish friendly side channels (that are designed avoid stranding or other impacts to aquatic organisms), and removal of hard shoreline armoring (to reduce edge habitat impacts, constriction of the stream, preclusion of riparian buffer establishments, and other effects).	Setback levees have been proposed since 1897 and rejected by the farming community due to the loss of 3,000 to 8,000 acres of farmland. However as far as moving more water down the artificial channel constructed by the Dike Districts it would definitely work. However the cost of doing this is probably beyond the capability of the local taxpayers.
319.	USFWS	6/19/2012	Where certain stream configurations or hard armoring is planned to be maintained or constructed, as in the case of Preliminary Alternative 3 (Urban Areas and Critical Infrastructure Protection), we encourage the Corps to include and consider a reach-based analysis for determining stability and indirect effects of a given feature, and adequately determine and avoid downstream and across-stream negative effects from the features.	Avoiding upstream and downstream impacts to people and property should come first then we will see what we can do for the polluted salmon killing our Orca whales.

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320.	USFWS	6/19/2012	This GI process gives the Corps an important opportunity to implement section 7(a)(1) of the Endangered Species Act, by “carrying out programs for the conservation of endangered species and threatened species...”, and section 2(c) of the Act, “...to seek to conserve endangered species and threatened species” and use “authorities in furtherance of the purpose of this Act”.	The only positive and guaranteed project that will preserve the salmon is to quit eating them. Boycott salmon.
321.	Wasserman		Not incorporating an analysis of climate change related hydrology is a fatal flaw from a NEPA perspective, a development of a clear pathway to address this issue would be timely	<u>E-mails to/from Corps/ Swinomish Environmental Policy Manager</u> On this issue I am in total agreement with the Swinomish. Climate change is an environmental issue that is absolutely a necessity of any NEPA analysis. At this point I don't think that anyone can seriously deny that the Mother Earth is heating up once again as she has in the past. The only legitimate argument is how much humans are contributing to the warming effect and speeding up the process. As I have said many times before, Mother Nature has left her footprints in the sand. Walk in Her moccasins and she will show you your past and your future. All you have to do is to pay attention.

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322.	Wells, G		Submitted letters he received from the Skagit County Public Works Department in 1996 documenting the Public Works Department's investigation of the drainage complaints on Starbird Road. In 1997, the Department found that the existing culverts were adequate but that downstream maintenance was necessary for the full performance of cross culverts under Starbird Road.	Comment noted, not sure why it was submitted.
323.	Wells, G		Prefers dredging and removal of debris from the North and South Fork.	See <u>Dredging Issue Page</u> . There is no commerce on the Skagit that would justify the millions of dollars it would take to dredge and add to that locals would have to provide the operation and maintenance. More millions. Its not going to happen

Project Alternatives: Alt. #1 Do Nothing; Alt. #2 Non-Structural & Dam Storage; Alt. #3 Joe Leary Slough Bypass/Floodway; Alt. #4 Swinomish Bypass/Floodway; Alt. #5 Urban Areas & Critical Infrastructure Protection; Alt. #6 System-Wide Levee Setbacks.