WDFW FIR ISLAND FARM RESTORATION FEASIBILITY STUDY
COMMENT TRACKING TABLE

Study Sponsor:	**Washington Department of Fish & Wildlife**
Study Parnters:	**Skagit Watershed Council, Skagit Conservation District, Seattle City Light, Western Washington Agriculture Association**
Study Consultant:	**Shannon & Wilson Inc.**

No.	Date	Party	Comment	Responder	Response
1	09/09/2010	Huges-Hayton	We are interested in information from you on impact at the cabin and our use of it - any constraints, topography changes?	WDFW-BWW	Possible short term construction impacts. No long term impacts. New dike will be 3' higher than existing.
2	09/09/2010	Huges-Hayton	We are interested in information from you on impact on farm(fences, monitoring, would this project constrain our use of our own adjacent property (development rights), reservoir north of project?	WDFW-BWW	6.6 acres of the Hayton Farm may need to be included in the restoration alternatives that include Dry Slough. WDFW intends to keep construction accesses on WDFW land. Potential development right impacted by loss of 6.6 acres? No drainage resevoir planned on Hayton Farm. No fencing along new dikes though short strategic fences across top of dike to restrict public access to dike.
3	09/09/2010	Huges-Hayton	We are interested in information from you on upkeep - how it would be handled, dike wide enough to drive on?	WDFW-BWW	WFW anticipates that CDD#22 will be responsible for future dike and drainage infrastructure maintenance. New dike top will be driveable.
4	09/09/2010	Huges-Hayton	We are interested in information from you on the potential tangible benefits from farm involvement in the WDFW Salmon Restoration Project?	WDFW-BWW	Including Dry Slough in restoration footprint will increase the area of restored tidal marsh and channel habitats and increase the number of Chinook smolts produced.
5	09/09/2010	Huges-Hayton	We are interested in information from you on irrigation - provisions for irrigating north of new project?	WDFW-BWW	It is unlikely that a water right can be established for the Hayton Farm as compensation for contributing 6.6 acres to the project. There is however the potential to enhance drainage storage in Dry Slough that could potentially provide enhanced groundwater recharge and subsurface irrigation benefits.
6	09/09/2010	Huges-Hayton	We are interested in information from you on blacktop surface on driveway resurfaced from Fir Island Road and extended to diesel tanks turn-around just past old barn?	WDFW-BWW	The driveway is not within the footprint of proposed projects. Paving the dirveway may be possible as part of a compensation agreement for including up to 6.6 acres of the Hayton Farm in a restoration project that includes Dry Slough.
7	09/09/2010	Huges-Hayton	We are interested in information from you on new road comparable to that on the game range from diesel tanks turn-around to bay, along edge of dike?	WDFW-BWW	The new road is not within the footprint of proposed projects. Building a new road may be possible as part of a compensation agreement to including up to 6.6 acres of the Hayton Farm in a restoration project that includes Dry Slough.
8	09/09/2010	Huges-Hayton	We are interested in information from you on new tidegate for farm, west of Jay Koetje's property, east of flood rock, across from Game Dept. sign?	WDFW-BWW	The location of the proposed new tidegate will need to be clarified. If a restoration alternative is selected that includes Dry Slough, a new tidegate may be justified to mitigate potential drainage impacts.
9	09/09/2010	Huges-Hayton	We are interested in information from you on lease payment?	WDFW-BWW	A restoration project the includes Dry Slough could require up to 6.6 acres of the Hayton Farm parrallel to the the slough for the purpose of flood dike or berm construction. WDFW would compensate the Hayton Farm the acreage necessary for the restoration project. The amount and form of necessary compensation would be discussed after a prefered restoration alternative is selected.
10	03/17/2011	CDD#22 -Stan Nelson	The district's main concern with the various proposals is that if Dry Slough is incorporated into the project that drainage will be severly compromised over time if not immediately. If the tidegates are moved upstream away from the present site, the slough will fill in and water will not move down it as it does now	S&W - D.Cline	District's concern is noted. WDFW and the study Steering Committee are considering restoration alternatives that do not include Dry Slough. Alternative 2A has been selected, which accomodates CD#22 request. We note however that CD#22 proposal for new SRTs on Dry Slough may have similar effects (reduced drainage capacity) to those described in the comment.
11	06/01/2011	CDD#22	Wants the restoration to stay out of Dry Slough.	WDFW-BWW	Your comment will be considered by the Steering Committee in the alternative analsyis phase of the feasibility study. Your comment has been inlcuded as an evaluation factor under Social/Political prioritization criteria #5.
12	06/01/2011	CDD#22	Support Quality Hunt program to scatter snow geese and reduce crop impacts.	WDFW-BWW	Comment noted.
13	06/01/2011	CDD#22	Support aggressive restoration footprint similar to that in the district's settlement agreement with the Swinomish Tribe.	WDFW-BWW	Alternative 1 was developed to most closely coincide with the restoration footprint in the district's settlement agreement. Alternative 1 will be considered in the Alternative Analsyis phase of the study. Alternative 1 may not retain sufficient agriculture area to meet the management objectives of the snow goose reserve.
14	06/01/2011	CDD#22	Concerned that shoaling will occur in the marsh outside of the project footprint that will compromise drainage. Example - Wiley Slough Retoration	S&W - D.Cline	The Fir Island project intends to include pre-excavation of tidal drainage channels, and placement of the materials in borrow ditches and elevated marsh plain areas. Pre-excavation will reduce the amount of sediment delivered to the downstream channels. We also note two additional considerations. 1) Existing downstream drainage channels at the Fir Island site (Dry, Claude O Davis, and Brown) are larger and hydrodynamic modeling indicates that these channels have higher velocities than the Wiley Slough area, which implies higher sediment transport capacity. 2) Wiley Slough is adjacent to the Skagit River South Fork and likely receives higher sediment loads than the Fir Island site.
15	06/01/2011	CDD#22	Proposed new dike top elevation of 17 NAGVD88 (+15.5 MLLW) is adequate for flood protection.	S&W - D.Cline	The project survey memo 1.1.1 provides a datum adjustment for MLLW-2.6ft = NAVD88. Using this adjustment, top of levee elevation of 17ft NAVD + 2.6ft = 19.6ft MLLW, which is nearly 4ft higher than CDD#22 stated level of protection. Design height includes observed extreme tidal high, wave height and long term sea level rise considerations.
16	06/01/2011	CDD#22	Concerned about managing logs in front of new tidegates.	S&W - D.Cline	Page 6 of Technical Memo 2.1 - Trash Racks are included with tidegate design.

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06/02/2011 OPEN HOUSE					
17	06/02/2011	Eunice Summers	We don't feel we or anyone on Fir Island should give up anything until the tribes are controlled from fishing like they do today. Seasons closed or open, day or night, they haul out fish totes all day and night from the boat house across from our house. We know what they are doing.	WDFW-BWW	Your comment has been noted and will be forwarded to WDFW's Fish Program managers responsible for fish harvest in the Skagit River.
18	06/02/2011	Curt Miller	Go for the gusto - Alt. # 1. If you are going to this much trouble, expense, etc. - then get the best and biggest bang, dollar to fish ratio. Add a viewing tower-low rise ADA accessible, 2nd floor for climbers. Congregrates people, displays area, reduces wood for trails, educate, interpret.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Alternative 1 will be considered in the Alternative Analsyis phase of the study. Alternative 1 may not retain sufficient agriculture area to satisfy the management objectives of the snow goose reserve.
19	06/02/2011	No Name	Do nothing.	WDFW-BWW	Comment noted.
20	06/02/2011	Brad Smith	1) Alternative 0. Leave it as is! 2) Alternative # 5, 3) Alternative #4, 4) Get nets out of river!	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Respecting local agriculture is a priority for WDFW. Over the past 8 years, WDFW has made a concerted effort to develop postive working relationships with the Skagit agriculture community. WDFW is committed to working with the delta diking and drainage districts to implment habitat restoration projects in a manner that is respectful of agriculture interest by advancing restoration project on public lands first, by minimizing the area of farmland that needs to be restored inorder to achieve the Chinook recovery goals and by protecting agriculture drainage and flood protection. Your comment regarding tribal nets in the river will be forwarded to WDFW's Fish Program managers reponsible for fish harvest in the Skagit River.
21	06/02/2011	Jack Sleasman	I don't want to lose anymore waterfowl land. My preferred option is 0. I could tolerate Alternative #4, #5, & #6. I am a hunter and fisherman and outdoorsman. I don't want to lose my traditional hunting as I've known it.	WDFW-BWW	Hunting has not been allowed at the Snow Goose Reserve. A restoration project at WDFW's part of the reserve will not effect the area of waterfowl hunting area currently available. In selecting a preferred restoration alternative, WDFW will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities.
22	06/02/2011	Kathy Souders	Nice Open House, good alternatives for early analysis. Looking forward to later decisions and further analysis to other species, etc.	WDFW-BWW	Comment noted.
23	06/02/2011	Maynard Axelson	I am concerned the farmland is not ideal for fish as it does not have a steady freshwater component as a river delta would. I think priority should be placed on using the established channels that are proven smolt habitat.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. WDFW is committed to replacing the snow goose reserve functions that are displaced by a estuary restoration project. Respecting local agriculture is a priority for WDFW. WDFW is committed to working with the delta diking and drainage districts to implment habitat restoration projects in a manner that is respectful of agriculture interests by advancing restoration project on public lands first, by minimizing the area of farmland that needs to be restored inorder to achieve the Chinook recovery goals and by protecting agriculture drainage and flood protection.
24	06/02/2011	Don Elliott	Thanks for doing this-great info. Appreciate involving local community. You can call on us anytime.	WDFW-BWW	Comment noted.
25	06/02/2011	Todd Frankenfield	My hope is that we will have an open mind to the Chinook problem in the Skagit. (Native nets, possibly dredging silt, etc.)	WDFW-BWW	Your comment about native nets in the river will be forwarded to WDFW's Fish Program managers who are responsibel for fish harvests in the Skagit River. WDFW agrees that Chinook restoration is the Skagit is a complex problem that will need creative approaches and solutions. Habitat restoration projects that rely on restored natural processes to create and maintain habitats and habitat functions help to limit future long term maintenance costs. However, in some circumstances engineered solutions may be necessary to acheive the habitat and Chinook restoration goals.
26	06/02/2011	Jim Ciecko	I support increased salmon production and additional public access to the river and tidelands. Alt. #1 looks most interesting to me.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Alternative 1 will be considered in the Alternative Analsyis phase of the study. Alternative 1 may not retain sufficient agriculture area to satisfy the management objectives of the snow goose reserve.
27	06/02/2011	Scott Witman	I am only in favor of alternative #4, 5 or 6. I hunt, bird watch and fish and feel hunters have given up enough land to salmon restoration with the Headquarters Project that has not been replaced for hunting as promised by the state.	WDFW-BWW	In selecting a prefered restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Public access and bird watching opportinities will be maintained. A restoration project at the reserve will not effect the area on Fir Island currently available for waterfowl hunting.

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28	06/02/2011	Jennifer Witman	Could tolerate #4, 5 or 6. 6 seems to get the most bang for your buck for minimal impact. Keep it as is if preference. The other proposals are too costly in habitat for other species, hunters and dollars. A lot of "if's" if it would even work. If it doesn't work, a lot of money and recreation were wasted. If you do the plan 1, 2, 3, I bet a bunch of invasive grass will take over and this is a lot of waste!	WDFW-BWW	In selecting a preferred restoration alternative, WDFW will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Post restoration monitoring data from WDFW's Deepwater Slough restoration site demonstrates that a restoration project at WDFW's Fir Island Farm site can be successfull. Restoration of natural tidal processes and habitats at the WDFW's Fir Island Farm site will benefit all of the fish and wildlife species that depend on estuary habitats and functions. Hunting has not been allowed at the snow goose reserve. Therefore the area open to hunting on Fir Island will not change as a result of a restoration project at the reserve. A plan and strategy for managing invasive plant speices at the site will be developed and implemented for whichever restoration alternative is implemented.
29	06/02/2011	Pete Haase	Nice job on charts, info., people to explain things. Decisions, Decisions!!	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities.
30	06/02/2011	Fred Folkertsma	We should leave Fir Island the way it is. It has some of the best farmland in the world. The fish and geese have plenty of reserve land on the game range. This farmland is irreplacable. We have some flooding issues but nothing compared to other areas that have tornadoes, etc. We very rarely suffer from crop failures and food is getting scarce.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Estuary habitat has been identified as a limiting factor to the recovery of Skagit River Chinook.
LETTERS RECEIVED					
31	06/07/2011	Dennis Clark	I am writing to voice my support for Alternatives 1 and 2 for the Fir Island Farm Feasibility Study. Tidal Channel and marsh habitats are necessary to provide critical rearing habitat for juvenile salmonids--particularly Chinook and chum that are highly estuarine dependent--produced uprive in the Skagit watershed. The created habitat also will benefit salmonids from other rivers such as the Stilly as the migrate alon the nearshore. An ambitious approach to restoration at Fir Island will help realize the investments of the las several decades in protecting and restoring freshwaer habitats higher in the watershed. Moreover, an ambitious approach to restoration at Fir Island will concentrate habitat efforts on public land rather than on private. Finally, an ambitious approach to restoration at Fir Island is in keeping with the goals of the Puget Sound Agenda.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities. Over the past 8 years, WDFW has made a concerted effort to develop postive working relationships with the Skagit agriculture community. WDFW is committed to working with the delta diking and drainage districts to implment habitat restoration projects in a manner that is respectful of agriculture interest by advancing restoration project on public lands first, by minimizing the area of farmland that needs to be restored inorder to achieve the Chinook recovery goals and by protecting agriculture drainage and flood protection. Comment regarding tribal nets in the river will be forwarded to WDFW's Fish Program who co-manages the fish harvests in the Skagit River with the tribal managers.
32	06/07/2011	WWAA	Support for project. We recognize and support that some conversion of farmland to habitat may be necessary to reach negotiated salmon recovery objectives. This objective also is consistent with the recently signed Skagit Delta Tidegates and Fish Initiative Agreement. We are pleased that this process is carefully analysing and addressing the issues invovlved in the conversion of farmland to esutarine habitat, loss of productive agriculture lands and the proteciton of critical agriculture infrastructure.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities.
33	06/13/2011	Bill Summers	Against turning productive farmland into wetland. Important to have farmland to feed the people.	WDFW-BWW	In selecting a preferred restoration alternative, WDFW and the study Steering Committee will endevour to maximize ecosystem health while balancing juvenile Chinook smolt production and snow geese winter forage, respecting local agriculture, maintaining public access and minimizing WDFW liabilities.
34	06/16/2011	CDD#22	Sheetpile to install tide gates?	S&W - D.Cline	SRTs would need to be installed along the bay front area of the dike. We recommend installing sheet piles with the dewatering system to limit the amount of underseepage in the trench excavation. Proper dewatering will allow the contractor to meet pipe foundation and bedding compaction requirements.
35	06/16/2011	CDD#22	We are looking at better pipe for culverts (HDPE).	S&W - D.Cline	HDPE materials will be identified and specified for pipe replacements.
36	06/16/2011	CDD#22	Bedding material under new tubes.	S&W - D.Cline	We recommend typical granular pipe bedding wrapped in a geotextile fabric (burrito) to act as a filter and prevent fine soil erosion along the pipe.
37	06/16/2011	CDD#22	How much of new dike will need armoring? Cannot rely on vegetation and debris remaining stable over time.	S&W - D.Cline	A full assessment of the extents of dike armoring will be evaluated in final design using the hydrodynamic model. We can utilize the proposed project 2A hydrodynamic model to evaluate likely flow velocity conditions, but bank protection design will be preliminary at this stage of project.
38	06/16/2011	CDD#22	Not much of old dike is probably suitable for new dike.	S&W - D.Cline	We agree. Old dike will be used to fill borrow ditches to north and south of existing dike. Project assumes that import fill will be used for new dike.
39	06/16/2011	CDD#22	Depth of road on top of dike should be 1 foot.	S&W - D.Cline	Depth of road surfacing to be updated to thickness of 1ft.

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40	06/16/2011	CDD#22	Cutoff design and or necessity needs to be decided on.	S&W - D.Cline	Necessity of cutoff design will not be fully evaluated at preliminary design phase of work. Cutoff design will be included as design "Option" to be fully evaluated during Engineering Design Phase of project. Cutoff to be included as placeholder for construction costs, if determined to be needed. Note: cutoff can also limit drainage through the levee towards the Bay, which also needs to be considered.
42	06/16/2011	CDD#22	22 foot top or places for trucks to pass.	S&W - D.Cline	Passing lanes and access ramps down levee will be included during Engineering Design Phase of project. Current phase of work does not include details for this type of grading desing.
43	06/16/2011	CDD#22	Interior drainage ditch along new dike should be offset from dike (10 feet?).	S&W - D.Cline	Current offset at toe of dike in preliminary plans is 15ft.
44	06/16/2011	CDD#22	If SRTs are installed consider putting them in vaults.	S&W - D.Cline	SRTs are not currently considered as part of the project.
45	06/16/2011	CDD#22	CDD#22 is concerned about the effects of dike removal on the dike along the west side of Brown Slough. The current rock is in disrepair and there is concern that the current dike along the reserve provides sheltering from wind-waves from the south and southeast. CDD#22 wants to keep in a “spur” of the existing dike out to the end of the trail to provide protection.	S&W - D.Cline	Spur dike will be evaluated as an option in Engineering Design phase of project and results of analysis presented to CDD22. Removal of existing dike and keeping spur may not performed as intended. For instance, the back side of the spur may need rock protection (possibly more) to provide protection. With and without spur dike alternative will be addressed in engineering design phase of work prior to 60% submittal.
46	06/16/2011	CDD#22	What is referred to as Dry Slough West is a manmade ditch as far as I know.	S&W - D.Cline	We agree. Dry Slough West is only a name to indicate that the ditch drains to the Dry Slough system.
47	06/16/2011	CDD#22	Dry Slough was dammed off from the river in 1951.	S&W - D.Cline	Revised references in Technical Memo 1.1.2 Geomorphology to Dry Slough closure in 1951.
48	06/16/2011	CDD#22	The entire area west of Brown Slough, except for the small pump at Hall’s Slough and the tide gate on the west bank of Brown Slough drains into Browns Slough (64-125 acres?). I would think the total is now about 1,000+ acres.	S&W - D.Cline	The exact amount of inflow from Rawlins Road tidegate and outflow through Brown and Hall Slough is unknown. The Battelle Rawlins Road report indicates that Hall Slough drainage "stores" water until the pump is turned on into Skagit Bay. Pumping operations would need to be defined to further calibrate the inflow model. Does any flow go through Rawlins Road tidegate? Currently, Brown Slough is not in project, so does not affect design. We will update Figure 1 in TM 1.2.1 to show flow contribution from Rawlins Road (west) area.
49	06/16/2011	CDD#22	In the TFI drainage area for the Davis Slough-No Name gates is listed as 2,023 acres. Some of this goes out the Dry Slough gates.	S&W - D.Cline	We checked Davis/No Name areas and it is 46ac + 961ac = 1007ac. If Dry Slough (west) 976ac is included, the total area would be 1,983, close to 2,023ac. However, Dry Slough West is the primary drainage to Dry Slough and not No-Name/Claude O Davis slough.
50	06/16/2011	CDD#22	What is referred to as Davis Slough does not reach Fir Island Road?	S&W - D.Cline	We removed reference to culverts underneath Fir Island Road. The inadvertent reference was for Dry Slough (West).
51	06/16/2011	CDD#22	As far as acreages Dave may be more accurate than TFI which is what I reference but is important consideration to maintain drainage.	S&W - D.Cline	Comment Noted.
52	06/16/2011	CDD#22	If dike is realigned and new gate is installed above present location will channel maintain itself of fill up with debris.	S&W - D.Cline	New tidegate (on Claude O Davis/No Name) will have reduced drainage area, but should maintain flushing flows. Channel maintenance is a function of both upstream drainage areas, as well as tidal drainage areas. Current predictions that there will be some infilling of downstream channel. Effects of project will be further evaluated with preferred alternative analysis phase of work currently underway.
53	06/16/2011	CDD#22	Once a preferred alternative is decided on the district will have more to say about location of gates, pumps or whatever else is necessary to	S&W - D.Cline	Comment Noted.
54	06/17/2011	CDD#22	The district is concerned abouth the time table for completion of the feasibility study. The completion of theis Phase III by January 1 is important to the momentum for a meaningful project.	WDFW-BWW	WDFW's Fir Island Farm Restoration Feasibility Study is currently on course to be completed by December 31, 2011.
55	06/17/2011	CDD#22	A copy of the map attached to the Consent Decree is enclosed with this comment. The project area closely conforming to that analysis is alternative 2A.	WDFW-BWW	The feasibility study restoration alternative that most closely represents the alternative decribed in the Consent Decree is Alternative 1A which modifies Alternative 1 by moving the flood dike to the west side of Dry Slough. Alternative 1 includes 202 acres of restored tidal marsh habiat.
56	06/17/2011	CDD#22	Adopt the GRRP alternative described in the Consent Decree. The District, consistent with its agreement set forth in the Consent Decree prefers inclusion in the flooded area of land to the cross ditch connecting Brown Slough and Dry Slough. It will create 180 acres of juvenile salmon habitat.	WDFW-BWW	The district's prefence for a restoration altenative similar to that described in the Consent Decree is so noted.
57	06/17/2011	CDD#22	Avoid interference with Dry Slough and Brown Slough interior drainage.	WDFW-BWW	The district's preference for the preferred restoration alternative to avoid impacts to Dry Slough has been noted and included in the criteria used to select the preferred alternative.
58	06/17/2011	CDD#22	Stay off private land.		The district's preference for the preferred restoration alternative to stay off private land has been noted and included in the criteria used to select the preferred alternative.
59	09/19/2011	CDD#22	Looking at the map of the proposed dike, the commissioners remain concerned with maintaining the viability of Browns Slough drainage and still believe leaving a stub dike out to approximately the gate blocking public access is the best way to address this. Perhaps access can be maintained to the gate so public access is not actually reduced.	S&W - D.Cline	S&W Response – We agree that there are concerns regarding Browns Slough functions, flood and erosion risks. However, the spur dike is a single option that has its own risks. For instance, the back side of the dike will likely need rock protection, and the effects of the spur on local hydrodynamics are not known. What we are proposing is that the spur dike be included as an option to be further evaluated in the engineering design phase of work. The project would evaluate the spur dike (as well as other options) to determine the best approach for meeting the objectives of protecting the Brown Slough gate complex and the dike west of the Slough.

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60	09/19/2011	CDD#22	In regard to water flow through the tide gates, I agree the water cannot flow through the tubes any faster than the tide recedes. In fact I feel the level in the drainage system lags behind the level of the tide, but you are saying that it does not?	S&W - D.Cline	S&W Response – We agree that there is a lag between the farm drainage and the tide, but it is on the order of tenths of a foot. Tom Slocum confirmed this in a follow up email from last week. If you look at the attached figure on Dry Slough from the interior drainage memo, you can see the water surface elevations downstream of the dike, upstream of the dike and upstream of Fir Island Road. Up at Fir Island road, the lag is higher. This is a function somewhat of the culverts, but even more so of the flat channel grade and backwater conditions in the Slough. A bigger tidegate and pipe might help, but downstream storage capacity is also needed so that the water flows a shorter distance to exit through the tidegates (and not the long distance along the channels). The downstream storage is what is included in the Fir Island farm Alternative 2A.
61	09/19/2011	CDD#22	Another issue is with the siting of flood gates. During a flood event the district needs access to the dike. If there is one flood gate the dike can be accessed from either side unless the dike fails or is taken down to let water out. If the gates are at two sites the area in between will not be accessible unless the structures are big enough to drive over, which would call for quite a structure. Not sure how to address this.	S&W - D.Cline	S&W Response – The project could consider an access route along the east side of the WDFW North Farm Field. This is a good question going forward on designing the floodgate system.
12/12/2011 OPEN HOUSE					
62	12/12/2011	Don Nieshle	Fish will survive. Don't mess with mother nature. Birds come and go.	WDFW - BWW	Comment noted.
63	12/22/2011	Brad Smith	My biggest concern I have with the design / modeling is having the east dike along Brown Slough removed so during an out going tide the water would be able to flow into Brown slough I believe the best design would be to the leave the current east Brown Slough dike in place or turn it into a stub dike so there isn't anyway possible for any out going tidal water from the preserve having any continuity with the Brown Slough drainage channel. Even with all the modeling that was done on the Wylie project with the best computer programs available to the Hydrologist there was one critical element that was forgotten about or just plain left out that has caused a tremendous amount of problems with drainage let alone the crop loss to local farmers and the additional cost to the State just the same the problem remains with that drainage system to this very day. I would like to reference the Wylie Slough project as an example of the potential impacts and problems that could go wrong with the current design of the goose preserve.	S&W - D.Cline	We agree that there are concerns regarding the continued function and protection of Brown's Slough drainage, as well as providing comparable or improved interior drainage in the No-name/Claude O. Davis and Dry Slough systems. A preliminary workplan for final engineering studies includes evaluation of a Brown's Slough spur levee along the current trail section. This is planned to address the last bullet on Page 95 of the report, and is also shown as an option in the Preliminary Plans Sheet 4 - 700ft Spur Dike OPTION. Results of the hydrodynamic modeling analysis, engineering recommendation and contingency plans will be presented to CD22 (and other interested parties) for final design recommendations. With respect to the Fir Island Farm interior drainage assessment, we have built upon lessons learned at Wylie and Fisher Sloughs and are using these improved approaches for analyzing and designing for Fir Island Farm. The Fir Island Farm project includes an 8.0 acre storage pond as a result of the preliminary engineering analysis. In addition to the storage pond, a number of contingencies (drain tiles/pipes and pump station) have been included in the project as drainage options if designs do not perform as intended.
12/27/2011 CDD#22 LETTER					
64	12/27/2011	CDD#22	A copy of the Consent Decree referenced on page 4 of the report is attached to this letter. Exhibit “A” for the Consent Decree outlines 188 acres as the proposed Goose Reserve Restoration Project that the Dike District advocates. We understand that the choice of Alternative 2A reduces the acreage dedicated to salmon restoration requested by the District. In keeping with the Consent Decree the choice of alternatives should be guided by the choice “that provides the greatest benefit for salmon, in consultation with the District”.	WDFW-BWW	Alternative 1 was developed to most closely coincide with the restoration footprint in the District's Consent Decree. Alternative 1 was considered in the Alternative Analsyis phase of the study. Alternative 1 does not retain sufficient agriculture area to meet the management objectives of the snow goose reserve and was therefore not selected as the preferred alternative. Also, Alternative 1 has greater impacts to farming and agriculture, and interior drainage storage than other alternatives.
65	12/27/2011	CDD#22	The Dike District strongly supports the restoration goals of Swinomish Indian Tribal Community and those goals stated at pages 2 and 3 of the draft report.	WDFW-BWW	Comment noted.
66	12/27/2011	CDD#22	The District is a special purpose district created to provide economic benefits associated with reduced risk of flooding, protection from saltwater intrusion, and establishment of reliable interior drainage for the benefited area. These benefits must continue to be the priority outside the lands dedicated to Goose Reserve Restoration for salmon.	WDFW-BWW	The economic benefits associated with reduced risk of flooding, protection from saltwater intrusion, and establishment of reliable interior drainage for the area potentially affected by the proposed 2A estuary restoration project at WDFW's Fir Island Farm were prioity considerations during the 30% design phase and will continue to be priority considerations during the 90% design phase.
67	12/27/2011	CDD#22	See attached to this cover letter a proposed revision of Section 1.4 that appears at the bottom half of page 4 and the top of page 5 of the report. We ask that this editing be included as a substitute for the Section 1.4.	WDFW-BWW	WDFW acknowledges that the district's proposed significant revision to Section 1.4 reflects the perspective of the district with regard to the Consent Decree. However, the existing Section 1.4 was carefully written to accurately reflect WDFW's understanding of and the Fir Island Farm (WDFW Project's) relationship to the Consent Decree. Because WDFW is not party to the federal lawsuit and is not bound or otherwise encumbered by the Consent Decree, it is appropriate for Section 1.4 to reflect WDFW's understanding and relationship to the Consent Decree and not that of the district. As such, Section 1.4 will be retained as written.

No.	Date	Party	Comment	Responder	Response
68	12/27/2011	CDD#22	The District strongly agrees that the recommendation appearing at the end of Section 2.1 on page 8 of the draft report. "The project is a large earthwork job and using LiDAR survey without a Professional Licensed Surveyor stamp on baseline survey conditions is a potential liability for claims during construction."	S&W - D.Cline	Comment noted.
69	12/27/2011	CDD#22	The District is particularly concerned that the loss of surface water gauges for Brown Slough, Dry Slough and the Skagit Bay tidal channels be recovered by scientifically reliable means or that new data be developed using the current installations referenced in the technical memorandum 1.2.1b.	S&W - D.Cline	WDFW has replaced gauges and is currently continuing to collect baseline data at the site. Not all original downstream tidal gauges were replaced as it was determined that the Brown Slough, Claude O. Davis and Dry Slough Bay Front tide gauges had nearly identical tidal elevations, temperatures and salinities. Currently only the Claude O. Davis Slough tidal gauge in the Bay Front remains in operation collecting baseline data. Other interior drainage (No-name, Claude O. Davis, Dry Slough) and the groundwater gauges also remain in place and continue to collect baseline data. Brown Slough interior gauges have been decommissioned as Brown Slough is no longer under consideration for the project and the proposed project will have little effect on Brown Slough water surface elevations, temperature or salinity. The primary concern, as noted by other comments, is sedimentation, erosion and wood debris transport that could occur along Brown Slough downstream from the tidegate complex.
70	12/27/2011	CDD#22	The engineering permitting phase of the study must include full land-based survey including topography, bathymetry, boundaries, structures, utilities, roads, right-of-way and easements, and environmental features such as wetlands and ordinary high water for inclusion in the design and bid documents.	S&W - D.Cline	Comment noted.
71	12/27/2011	CDD#22	The District had LeGro & Associates perform a survey describing the District levees and dikes after the damage in the 1990 flooding. It is suggested that the professional land surveyor who stamps the baseline survey conditions have access to the District data prepared at the time the original construction was done and as modified and verified in the LeGro & Associates survey work.	S&W - D.Cline	Comment noted.
72	12/27/2011	CDD#22	At page 13 we believe that additional data regarding the high marsh and combination of degraded marsh and added marsh should be assessed using data collected and analyzed by Philip Williams & Associates, Ltd, consultants in hydrology who prepared for the Skagit Watershed Council a draft report PWA#1550 February 29, 2004.	S&W - D.Cline	Agree, PWA report indicates up to 148 acres of tidal marsh loss in Hall, Brown and Dry Slough areas. The reference and information was included/revised in report. We did not reevaluate the alternatives in specific reponse to adding the PWA 2004 report information. The PWA 2004 report data is the original basis for the regression equation analysis methods presented in Hood 2010a. Also, the effects of exterior (Bay Side) tidal marsh losses (and new potential channels from restoration) are accounted for in the marsh restoration tidal channel predictive model.
73	12/27/2011	CDD#22	The final design should also be informed by the 2004 House Bill 1418 Report – Tidegates and Intertidal Salmon Habitat in the Skagit Basin prepared by Carol J. Smith, PhD and Ed Manary for Washington State Conservation Commission with contributing chapters by the Western Washington Agricultural Association and by Gregory Hood, PhD, Skagit River System Cooperative. The role of tidegates and drainage systems set forth on pages 36 through 55 and the restoration strategies including methods, results and discussion provide an underlying basis for the Consent Decree and the twin objectives of preserving agricultural drainage and restoring salmon habitat between Dry Slough and Brown Slough. See pages 74 and 75 plus Figures 24 and 25 at page 76. See attached.	WDFW-BWW	The data used to conduct the restoration analysis presented in the 2004 House Bill 1418 Report was used in combination with extensive additional data developed through WDFW's feasibility study to evaluate different restoration alternatives for WDFW's Fir Island Farm, to select a preferred restoration alternative and to develop a 30% design for the preferred alternative. The twin objectives of preserving agriculture drainage and restoring salmon habitat were priority considerations in the alternative analysis phase of the feasibility study and during the 30% design phase for WDFW's preferred restoration alternative 2A. They will continue to be priority considerations during the 90% design phase.
74	12/27/2011	CDD#22	At page 89 and following the Shannon Wilson draft report analyzes the interior drainage of the project area. In particular the reservoir for drain water coming north to south across Fir Island that will be impacted by new dikes shows an adverse impact to the drainage system for surrounding property.	S&W - D.Cline	Yes, we agree. We believe you are referring to the 50-ft and 100-ft wide interior drainage storage ponds which had increases in water surface elevations by 1.7-ft and 0.7-ft respectively. A third interior drainage storage pond with a 200-ft design width showed 0.0-ft increase, indicating no impact to interior drainage and justifying that the 200-ft wide pond adequately mitigates the losses of interior drainage storage. We note that the combination of Alt. 2A and Alt. 4 (Dry Slough Tidegate) also shows a 1.3-ft increase in water surface elevations indicating that the SRT gate in Dry Slough, combined with the Fir Island Farm project may have interior drainage impacts. We recommend these two separate efforts be fully coordinated if both efforts move forward.
75	12/27/2011	CDD#22	The measures to mitigate identify as increasing the storage pond size are helpful, however, from a drainage maintenance standpoint the key request by the District appear at page 95 near the top where the floodgate structure is proposed.	WDFW-BWW	WDFW acknowledges the district's interest in a new flood return gate "floodgate" structure that would improve river flood drainage fo the central Fir Island drainage area to Skagit Bay resulting from large Skagit River flood conditions. As noted on page 95 of the report, though a new flood flow return floodgate is beyond the scope of WDFW's requirements to replace in-kind existing drainage infrastructure and to mitigate for project impacts, WDFW is willing to work the district to incorporate a flood flow return floodgate at the restoration project site when the district completes a central Fir Island drainage analysis studies that identifies WDFW's restoration site is the most appropriate location for a flood flow return floodgate.

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76	12/27/2011	CDD#22	This measure plus a pump station contingency are essential to relieve the drainage deficit which will occur when “live” storage described at page 90 at the end of 4.3.1 does not exist.	S&W - D.Cline	A pump station is included as a contingency item as an option if there are unforeseen complications with interior drainage design as listed on Page 95, Section 4.10.2. We are also including other agricultural drainage contingencies such as drain tiles and modification of drainage structures as contingency options if adjacent farm lands have unacceptable rises in groundwater table conditions.
77	12/27/2011	CDD#22	Having relief structures such as a floodgate located on the surface of the flood plain and having a contingency for pumping when conditions warrant are essential to maintaining reliable systems and interior drainage.	S&W - D.Cline	The WDFW Fir Island Farm project proposes to build and raise the dike setback structure and replace existing tidegates that are affected by the project. A floodgate, while desireable, is not the sole responsibility of the Fir Island Farm project to design and construct. The proposed project does not have adverse affects on large, Skagit River Flood and drainage conditions on Fir Island, and is not responsible for mitigation design and installation of a floodgate structure. Also, installation of a series of floodgates along the Skagit Bay front dikes is recommended to work as a system for draining large Skagit River floods from Fir Island. Installation and maintenance of said system is CDD22 responsibility. If CDD22 is interested in including at floodgate (and providing funding for design and construction of a floodgate) in tandem with the Fir Island Farm project, WDFW would be ammenable to working with the district on including this structure in the design.
78	12/27/2011	CDD#22	The District also has a comment concerning 4.3.3 a further interior drainage analysis relating Alternative 4 to Alternative 2A. The District strongly prefers a larger more effective plan for creating habitat between Brown Slough and Dry Slough with the floodgate and pumping contingencies to modification of Brown Slough or Dry Slough. Because Dry Slough has been identified as the alternate for fish habitat, the report correctly points out the need for coordination if both projects move forward.	S&W - D.Cline	We note that a larger plan and project footprint (i.e. setting back the dike similar to Alternative 1) has greater impacts to interior drainage storage (i.e. needs an even larger storage pond) and impacts WDFW's ability to provide snow goose management on the reserve. The process for selecting Alternative 2A accounts for the need to balance natural resources as well as mitigate and reduce impacts to adjacent farm and interior drainage structures. We addressed floodgate and pumping contingencies in the previous comment. In response to coordination between the Dry Slough SRT tidegate habitat restoration project, and the Fir Island Farm dike setback project, we strongly agree that coordination between the two efforts is necessary.
79	12/27/2011	CDD#22	Finally, the District is concerned about the next steps in implementing the Goose Reserve Restoration Project. If the Fir Island Farm Restoration Study becomes the basis for proceeding then it will become important to have engineering certainty for the design and the construction bidding. A disclaimer of the type made by David R. Cline on page 102 of the report must be replaced by stamped drawings that provide professional assurance that the engineering of the project has been completed to the standard that gives reasonable certainty to the Department of Fish and Wildlife, the District and the Tribe.	S&W - D.Cline	Eventually, pending the availability of funding for design and construction, a full set of stamped, engineering plans and reports will be provided to WDFW indicating engineering duty and standard of care has been applied. Also, additional supporting engineering studies will be performed to reduce project uncertainties. However, full removal/replacement of any and all report disclaimers and limitation statements on final engineering plans and reports (with an engineering stamp only) will not likely occur as there are always uncertainties and risks, beyond the standard of care, associated with any project design.