SKOKOMISH RIVER BASIN
MASON COUNTY, WASHINGTON
ECOSYSTEM RESTORATION

APPENDIX M

PUBLIC COMMENTS AND RESPONSES

Integrated Feasibility Report and Environmental Impact Statement

US Army Corps
of Engineers
Seattle District

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Skokomish River Basin Ecosystem Restoration
Mason County, Washington
Public Comments and Responses on the Draft Feasibility Report/Environmental Impact Statement

1.1 Introduction

This document responds to comments received on the Skokomish River Basin Ecosystem Restoration Project (Project) Draft Feasibility Report and Environmental Impact Statement (DFR/EIS) by the U.S. Army Corps of Engineers (Corps). Comments were submitted verbally at the public meeting held in Shelton, Washington, on March 20, 2014. Comments were also received in writing through public comment forms provided at the March 2014 public meeting, letters, and electronic mail. A total of 26 comment submittals were received. All comments were received during the 45-day open public comment period of February 21, 2014 through April 7, 2014.

At the time the DFR/EIS was released for public review, the project team was using local site names to refer to specific features or alternatives proposed for implementation. During the project's feasibility-level design phase, site names were formalized in the Final Feasibility Report and Environmental Impact Statement. The responses to public comments outlined in this document reference the original, local site names presented in the DFR/EIS; however, the Final FR/EIS presents updated naming conventions for some sites.

1.2 Environmental Review Process

On February 21, 2014, the Corps released the Draft Feasibility Report and Environmental Impact Statement for public review. A Notice of Availability for public review of the documents was filed in the Federal Register (EIS No. 20140044). Printed copies of the DFR/EIS were available for public review at local public libraries. Additionally, the documents were available for public review on the Corps' website at http://www.nws.usace.army.mil/Missions/CivilWorks/ProgramsandProjects/Projects/SkokomishRiverBasin.aspx.

The public review and comment period on the DFR/EIS began on February 21, 2014, and closed on April 7, 2014. One public meeting was held to receive public comment on the DFR/EIS and Appendices in Shelton, Washington, on March 20, 2014.

1.3 Document Organization and List of Commenters

This document contains copies of comments received during the comment period followed by the Corps' responses to those comments. Each comment is numerically coded in the margin of the comment letter, based on the order of the comments presented in the letter. The comments and responses are presented as follows:

- Master Responses (Section 1.4)
- Verbal comments received and recorded at the public meeting, with responses (Section 1.5)
- E-mail comments from agencies, organizations, and individuals, with responses (Section 1.5)
- Mail comments from agencies, organizations, and individuals, with responses (Section 1.5)

1.3.1 Individual Comment Submittals

A total of 26 comment submittals were received on the Draft Feasibility Study and Environmental Impact Statement. Each comment submittal was given a comment identification code. 13 comments were provided verbally at the March 2014 meeting. These comment submittals are identified as PM1 to PM13. 8 comments were provided by email; these submittals are identified as E1 to E8. The remaining 4 comments were received by mail; these submittals are identified as M1 to M4. Each comment submittal is listed below in Table 1.

Comment Identification	Date comment received	Speaker/Comment Letter Author	Organization/Affiliation
PM1	3/20/2014	Bill Hunter, Jr.	Private Citizen
PM2	3/20/2014	Greg Stairs	Private Citizen
PM3	3/20/2014	Alann Krivor	Private Citizen
PM4	3/20/2014	Barb Kealy	Private Citizen
PM5	3/20/2014	Bill Hunter, Sr.	Private Citizen
PM6	3/20/2014	Frank Ragan	Private Citizen
PM7	3/20/2014	Mali Krivor	Private Citizen
PM8	3/20/2014	Blase Gorny	Private Citizen
PM9	3/20/2014	Rich Geiger	Mason Conservation District
PM10	3/20/2014	Bob Albaugh	Private Citizen
PM11	3/20/2014	Art Tozier	Private Citizen
PM12	3/20/2014	Jens Stratton	Private Citizen
PM13	3/20/2014	Janie Kamin	Private Citizen
E1	3/26/2014	Jeffrey Gaeckle	Washington State Department of Natural Resources
E2	3/28/2014	Jason Ragan	Private Citizen
E3	3/29/2014	Mali Krivor	Private Citizen, Skokomish Farms, Inc.
E4	3/30/2014	Alann Krivor	Private Citizen, Skokomish Farms, Inc.
E5	4/6/2014	David Kregenow	Private Citizen
E6	4/7/2014	L.B. Kregenow	Private Citizen
E7	4/7/2014	Derek Booth	Private Citizen
E8	4/8/2014	Robert Dach	Bureau of Indian Affairs
M1	4/7/2014	Kim Kratz	National Marine Fisheries Service
M2	4/7/2014	Karen Willie	On behalf of six ranching families
M3	4/5/2014	Blase Gorny	Private Citizen
M4	4/3/2014	Allison O'Brien	U.S. Department of the Interior

Each comment submittal is reproduced in its entirety in this appendix. Where a comment submittal included multiple comments, each comment was assigned a sequential number. Following each comment submittal are the Corps' responses to the comments raised in the submittal.

Verbal and written comments received during the public comment period are presented in Section 1.5.

1.4 Master Responses

A review of the comment letters received on the DFR/EIS revealed that some comments were made frequently, demonstrating a common concern among those submitting written comments. In some

cases, the array of similar comments about a particular topic provided more clarity about a specific issue than any single comment. To allow presentation of a response that addresses all aspects of these related comments, master responses have been prepared for those topics that were raised in a number of comments. These master responses are intended to allow a well-integrated response that addresses all facets of a particular issue, in lieu of piecemeal responses to individual comments that may not have portrayed the full complexity of the issue.

When applicable, the individual responses to comments cross-reference an applicable master response to provide additional explanation and information. In some cases, a master response may fully respond to the individual comment.

Master responses have been provided for the following issues raised in comments received on the DFR/EIS:

- Master Response 1, Hunter and Weaver Creeks – Removed from Tentatively Selected Plan
- Master Response 2, Landowner Willingness
- Master Response 3, Project Scope – Flood Risk Management
- Master Response 4, Placement of Dredged Material
- Master Response 5, Agriculture in Skokomish Valley
- Master Response 6, Study Authority

1.4.1 Master Response 1, Hunter and Weaver Creeks – Removed from Tentatively Selected Plan

Landowner willingness is a key component of this restoration project. Based on feedback from landowners during public review of the Draft Feasibility Report/Environmental Impact Statement, the Hunter and Weaver Creek tributary projects (site # 39, 40, and 43) have been removed from the recommended plan.

- This master response applies to the following individual comments: PM9, PM10, E3, E6, M3

1.4.2 Master Response 2, Landowner Willingness

Landowner willingness is a key component of this restoration project. The Corps and local sponsors have worked to engage landowners throughout the study, including multiple public meetings, listening sessions, and public review of the Draft Feasibility Report/Environmental Impact Statement. If Congress authorizes the recommended plan, landowner outreach will continue during the Preconstruction, Engineering and Design Phase. During this phase, the Corps and local sponsors would continue to work to refine the project designs in coordination with landowners and stakeholders. If there are landowners who are unwilling to negotiate with study sponsors to provide necessary property, individual project sites will be modified and/or removed from the proposed restoration plan.

- This master response applies to the following individual comments: PM1, PM9, PM10, PM12, PM13, E3, E4, E5

1.4.3 Master Response 3, Project Scope – Flood Risk Management

To justify a flood risk management project, the Corps must indicate the benefits of building a flood risk management project outweigh the costs of the project. This "benefit-cost" analysis is completed by the study's economic team and must follow prescribed regulations developed by the Corps. A preliminary economic analysis was completed in 2012; results of this analysis were presented to the public in March 2012. The economic analysis indicates that the economic benefits (or damages avoided) of a potential flood risk management project do not adequately offset the expected costs of a flood risk management project. The economic analysis results do not justify the significant project cost for a Federal (Corps) flood risk management project in the Skokomish River Basin.

The Corps acknowledges that flooding is a problem and major concern in the Skokomish River Valley; however, flood risk management is not a project purpose of the feasibility study and the recommended plan will not include features that directly address flood risk management in the study area. Although the Corps is not recommending specific flood risk management projects, local and state government agencies intend to continue locally-funded flood damage reduction efforts to achieve local goals, such as preserving local business, communities, and historic land uses. Mason County may still take action to reduce flood risks in the Skokomish Valley, including possible implementation of agricultural best management practices.

- This master response applies to the following individual comments: PM2, PM5, E7, M2

1.4.4 Master Response 4, Placement of Dredged Material

The Corps analyzed many possible alternatives for placement of dredged material including placement of material in Annas Bay, open water disposal, and placement of material in a quarry or other stockpile area. Due to the significant amount of dredged material associated with the riverbed excavation alternatives (up to 2.5 million cubic yards), placement of material in Annas Bay was determined to be the most feasible alternative and would provide ancillary environmental benefits associated with creation of high quality shellfish habitat.

The Corps did not complete a detailed cost estimate for all possible transport and placement options for dredged material because the study was not scoped for this kind of specific and quantitative evaluation. However, the Corps did complete a qualitative analysis of dredged material disposal options which are summarized below.

The Corps understands that many of the area farms could use limited amounts of gravel for roads or minor infrastructure improvements. The Corps also acknowledges that small amounts of land could be rented to stockpile dredged materials. However, the volume of material proposed for removal (2.5 million cubic yards) likely exceeds the amount of land available for stockpiling or material required for small-scale infrastructure improvements. For example, stockpiling 2.5 million cubic yards of dredged materials would create a small mountain with a quarter-mile wide diameter base and height of approximately 160 feet; this stockpiling of materials in the Skokomish Valley is substantial.

Additionally, levees could not be built with dredged materials from the riverbed. The use of dredged materials for levee construction is not a preferable practice because river alluvium in the study area is typically coarse grained with little to no fines content. These materials will exhibit a high permeability and will not be effective in the levee's primary purpose of excluding flood waters. In addition, alluvial deposits are typically poorly graded and composed of rounded particles; these attributes make the soil less desirable for compaction and strength. Extensive processing of the dredged materials would be required to produce an ideal soil gradation, which would add to the project cost. Nearby glacial soils

have been identified as a superior borrow source for levee fill. Even if riverbed materials were suitable for levee construction, the volume of material proposed for removal associated with the large-scale dredging alternatives far exceeds the amount of material required to construct levees (e.g., 2.5 million cubic yards of dredged materials would create a 6-foot tall levee with a top width of 20-feet; it would be 60 miles long).

- This master response applies to the following individual comments: PM2, E3, E5, E6

1.4.5 Master Response 5, Agriculture in Skokomish Valley

The Corps acknowledges and understands that the Skokomish Valley is the largest agricultural area in Mason County with a long history of agricultural production. The Corps also understands the value of agriculture in the Skokomish Valley and recognizes that declining agricultural productivity is a significant concern. Proposed ecosystem restoration projects included in the recommended plan are intended to be compatible with ongoing farming and agricultural practices and were not formulated to deliberately harm agricultural production in the Skokomish Valley. Much of the lower Skokomish River basin is zoned as Agricultural Resource Lands. Mason County Comprehensive Plan (updated 2005) includes goals and policies aimed at preserving and protecting agriculture.

While this Integrated Feasibility Report/Environmental Impact Statement focuses on ecosystem restoration, Mason County and project partners have been very mindful of landowner concerns and projects serving dual purposes are included. For example, channel restoration improves habitat as well as potentially reducing the high water table negatively impacting farming. Ecosystem restoration projects implemented in conjunction with local flood risk management projects, agricultural best management practices, and other actions throughout the watershed are intended to more holistically restore the Skokomish River Basin for the benefit of both humans and ecosystem resources.

- This master response applies to the following individual comments: PM5, PM10, PM11, PM12, E2, E7

1.4.6 Master Response 6, Study Authority

The applicability the Section 209 authority to studies on ecosystem restoration was examined early in the planning process. The Senate Report associated with the Flood Control Act of 1962 (S. Rpt. 87-2258) indicates a Congressional intent to support a broad range of “allied purposes” including environmental preservation and restoration under the umbrella of flood control and navigation. Additional areas of the report provide further background on Congressional intent with regard to the authorization. USACE Headquarters has confirmed the appropriateness of this study authority for study of ecosystem restoration in the Skokomish River Basin.

- This master response applies to the following individual comments: E5, M2

1.5 Public Comments and Agency Responses

PM1	Commenter:
Verbal at public meeting 3/20/2014	Bill Hunter, Jr.

Comment:
I can't really make any formal comments on advice of counsel right now. But I had a few comments on the process maybe. And I have worked on previous plans. I've worked on flood advisory board for quite a number of years when that was active. And you want local buy-in but you don't have a local process. So for me, you know, there's no way I can come on board at the tail end of something and have - I want to say confidence or any respect for the process. And for me, it's been probably a total waste of flood board money to this point in time. I'm sorry the county didn't ask to give our input. Thank you.

1

USACE response:

1: See Master Response 2.

PM2	Commenter:
Verbal at public meeting 3/20/2014	Greg Stairs

Comment:
I've been a resident of Union my whole lifetime. I've seen issues with the Skok River. We pretty much know what caused the flooding issues way back when, logging. We don't need to point fingers. At this meeting, I don't think we need to point fingers either. However, I do believe the study is extremely, extremely limited in scope. It does not address flooding in any way, shape or form. Has it been looked at how much money the gravel is worth that would be dredged out of that river and where that money would come to? Preferably I believe it's Mason County. Those issues have not been addressed.

1

I know in the lower river, there is mud down there that would be costly to dredge. However, I've noticed in the last five years, as the water comes into the Hood Canal, the channels are not there that have been there forever, since I was yay high. They're just kind of filling in. Oysters are coming in. I see a lot more salt content.

2

I just think this whole thing, instead of focusing on fish, needs to focus on the whole big picture. There's not just one thing in the ecosystem that needs to be looked at. It needs to be looked at a whole project. I look every year and see the poor homeowners and people driving the roads and the Skokomish Tribe being flooded out. That is not good. And that needs to be addressed. It's not just about one issue, fish, putting in a couple little things here, couple little things here, for some $41 million. I just believe the whole thing needs to be addressed as a whole and look at the broad picture. I just don't think that the thing was properly looked at as a whole. It's just kind of very narrow-minded as far as the benefits.

3

And really what are those benefits? Do we really know? Not until it's done. And there may not be any benefits. All those little channels there being put in, they may all just fill in with

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sediment. Because the roads are there. Other stuff is there. The sediment backs up. Boom. They're not there anymore. So is this going to be a means to an end or just a small throw some money at it like all the millions of [...] dollars of studies on the Skok River and they've ended up with nothing. And it's just another one of them.

4

USACE response:

1: See Master Response 3 and Master Response 4.

2: Comment noted.

3: The Corps' recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed. There is a strong, united effort by Federal, State, and local agencies as well as the Skokomish Indian Tribe for holistic restoration of the Skokomish River Basin. Various Federal and State agencies as well as local entities are working within their individual authorities and within specific areas of the Basin to implement restoration activities throughout the upper and lower watersheds. While the Corps' study is recommending an ecosystem restoration plan for the Skokomish Valley, the synergistic efforts of those involved in restoration of the entire Skokomish River watershed will produce positive, cumulative effects across the Basin.

Mason County, the Skokomish Tribe, and Mason Conservation District intend to pursue many projects not included in the final Federal Plan over the next several years. Preliminary design and environmental impacts have been completed and assessed for most under this Integrated Feasibility Report and Environmental Impact Statement. Grant funds will be pursued to complete final design and construction of these important projects. Completing these projects at the local level will likely enable local sponsors to move more quickly and cost-effectively.

4: Regarding the proposal for extended channels along the tributaries, the preliminary design was to excavate deep enough to intercept the same groundwater that feeds the tributaries. It was assumed that new channels would have reliability of flow equal to that of the tributaries. Benefits of tributaries to riverine ecosystems include greater habitat area for aquatic-oriented mammals such as river otters and mink, greater fish productivity that can support more recreational fishing, and more drainage channels for flood flows.

PM3	**Commenter:**
Verbal at public meeting 3/20/2014	**Alann Krivor**

Comment:

My name is Alann Krivor and we bought the old [Richert] farm, approximately 890 acres on the north - most of it on the north side of the river. We put 161 acres - I believe a hundred and - no - about 60 acres into an emergency watershed protection program. Because what happened, the north fork flowing down into the south fork and then forming the main stem, there was an old dike in there that blew out before we bought the property. The north fork then changed its channel and it went into an old channel and flowed down along the north side of the car dike and into then the main stem.

1

Okay. What I see happening is that you're going to remove the car dike. Now, we have

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subdivided the farm into 18 40-acre parcels. Of those, 14 of those have been sold in the area of about $300,000 each. Okay. If the south fork suddenly moves . . . Where it is right now, where the main stem is below the car dike, that area dries up at times and the river then floods out and goes into the south side of the valley. Our elevation is only slightly higher. So now the south fork - what you're proposing the south fork now is going to swing up against our land, against the EWP easement that we gave the feds. And is that going to spread into our fields? I promise you that our buyers who have paid an average of $300,000 each are not going to be happy. And would the feds then be willing to pay damages to our fields? Because those lower fields above the EWP area are going to be strictly in all crops. And that's why these people are buying there.

So anyway, that is my question. And I hope you can answer it. Can you guarantee that the gravel will not move into the new south fork channel, which then is against our land? Thank you.

1

USACE response:

1: Removing the Car Body Levee would divert much of the South Fork water and bedload into the existing North Fork channel. Based on recent deposition rates, the initial deposition rate in the combined channel could be in the 0.1 +/- 0.05 feet/year range. As the combined channel aggrades, it would meander across the floodplain, forming and abandoning gravel bars. This natural meandering process will develop a complex series of stream habitats that will be beneficial to salmon and other fish. During the 50-year project life, there could be two to three feet of deposition across the entire 1,000- to 2,000-foot wide floodplain between the old and new confluences and north of the existing channel; however, specific locations of future gravel bars, new stream habitats, and/or areas of deposition cannot be identified or confirmed.

PM4	Commenter:
Verbal at public meeting 3/20/2014	Barb Kealy

Comment:

I moved out here in 1979. And I've been through a couple of these meetings already. And the thing that I find to be hilarious is the fact that you can spend so much money and never get nothing done. We still have the same problems as what we've had twenty some, thirty some years ago. And could you get the Grange on there, that one with the Grange? Because you're going to be putting in all these so-called levees and you're only going to make them so high so that the water can flow over. Well you know what? It's going to give [Richerts] a hellacious field full of dead fish and fertilizer. Because we used to live right there on the corner. And the water doesn't come from this way in, it comes from this way across (indicating). So the levees, what you're going to be doing is you're going to be catching the water. And the thing I often wondered is who personally goes out and checks these things. Or are you looking at maps and things like that? Because you have to be there year after year after year to see what's really happening. And it reminds me of the sink is plugged but you keep adding water. Until you get rid of the plug, you're not going to have any drain. And what's happened is the fish, who - believe it, I love salmon - I don't want them in my yard or hanging on my fence. You know. You want them where they're supposed to be. But if you don't fix the path, they're not going to have anyplace to go. So having all these levees aren't going to help anything.

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Now in 2009, we were camping out there on the river. And that's the first time I saw elk. And that was right there. And it was - scared the daylights out of all of us. We spent the night in the car because we couldn't figure out what that whistle was. But anyway, you know, there's a lot of fond memories in this place.

2

And it just seems like we go through blowing money when there's so many other things that you could do. Yes, it needs to be fixed. But are you doing it the right way? And that's what - you know, basically that's what it is. Because for the last three years, we have gone camping down there. And there's no water in the rivers. I can't even take the kids fishing because you can't fish unless you get to the other side of the Skok Bridge. And it's like oh, my God. You know. I mean here's all these years that we've been there. And my kids, that was their big dream was catching these fish.

3

So you know - but still I had to get my two cents worth in there because I'm all for fixing it. But are you doing it right? And that was my big thing.

USACE response:

1: Hydraulic modeling informed the design for the levee breaches, new levee locations, and alignments of the proposed levees. There is no entity charged with monitoring fish stranding due to the safety risks during flooding events; therefore, local knowledge and reports of fish stranding also guided the levee designs.

2: The Corps recognizes the great recreational values of the Skokomish River and important wildlife viewing opportunities afforded by the rural character of the valley. We appreciate having personal accounts of recreational experiences.

3: Corps guidance requires the systematic formulation of alternative plans to ensure that sound decisions are made with respect to development of alternatives and ultimately selection of a recommended plan. For this feasibility study, alternatives were formulated to address the critical needs of the study area (provide year-round passage for fish in the reach of the river that runs dry during summer months). The study team, non-Federal sponsors, local and regional stakeholders, and the public identified a number of potential restoration sites in the study area. Multiple rounds of screening and evaluation led the study team to carry forward and ultimately recommend only those alternatives that address the critical needs of the study area, ensuring that the recommended plan is a part of a comprehensive effort to restore the Skokomish River Basin.

PM5	**Commenter:**
Verbal at public meeting 3/20/2014	**Bill Hunter, Sr.**

Comment:

We're from a family that lived, farmed, prospered in the Skokomish Valley well over a hundred years. And to see the river degrade the way it did and destroy the valley is just pitiful. Almost hard to stand up here and not go to tears when you talk about it after watching it 80 plus years that I've been in the valley, watching it. And there's nothing done. I have two generations in the room that want to farm and prosper. But unless the river is addressed, there's no prospering in agriculture in Skokomish Valley.

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And our farm's never been fish habitat. We've been growing crops on it. And the only thing I really came up - want to ask, you know, you say the valley isn't worth saving. You told us last time benefit/cost ratio. I'd like to know how you - I'd like a copy of your benefit/cost ratio mailed to me so I can see. I think the valley is worth saving. It's prospered well over a hundred years by our family and several others in the valley. And I think it's worth saving. I said that. But unless there's something addressed besides just the habitat, it's a lost cause. And the two generations behind me won't prosper in agriculture in Skokomish Valley.

2

USACE response:

1: See Master Response 5.

2: See Master Response 3.

PM6	Commenter:
Verbal at public meeting 3/20/2014	Frank Ragan

Comment:

I live farther up the valley. And Vance Creek is the problem up our way. It flows into the Skok. And where I live, it don't flood so bad. But the water runs into the bank and washes the gravel, which years ago the county put some riprap in when I was about this tall (indicating). And I tell you, for a few loads of riprap, it held for like 40, 50 years. But it washed down. It's washing on the neighbor's property and washes around to the bridge, washing into the bank. It's going to take out road. And it would be a lot cheaper to fix it than to let it wash out the bridge, you know, the bank and all that. Also, I live just down from there and it's washing in in my neighbor's house, my property. It's washing into my neighbor's house close. It's hitting in there.

They've logged - logged a lot the last couple of years up there on Vance Creek. And it's a torrent flash flood and it just eats the bank very fast and it washes all down and fills in the river. And there's a few places that could be just reduce sediment so very much if it was just a little bit of work. My neighbors had some done a couple years ago and it worked really, really good.

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USACE response:

1: The Corps is not proposing restoration projects on Vance Creek. However, Mason County may pursue projects in this area to addressing flooding or ecosystem restoration in the future.

PM7	Commenter:
Verbal at public meeting 3/20/2014	Mali Krivor

Comment:

My questions are about the coming on board, being committed, buying into the plan, and it's going to take the best efforts of those that are impacted to do this. Since I think our farm is going to have a sizable impact, what's the difference between selling land, asking us to sell land, or easements? And would easements come with a rental fee? This is productive ag. land. This isn't just swampland. And so what you're asking our villagers to do is to give up productive ag. land for what kind of compensation? When will the compensation be defined? And why do we have to sell? Why won't easements work? So those are my questions.

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USACE response:

1: The Corps is currently working to identify the lands needed for/affected by the project footprint. Once the project footprint has been determined, the Corps Real Estate Division identifies the minimal real estate interest (fee purchase, easement, etc.) required for each affected parcel and develops a real estate map to reflect the real estate needs. Utilizing the real estate map that has been developed, an appraisal is performed on the property to determine its fair market value based on the type of real estate interest (fee purchase, easement, etc.) is identified for each respective parcel.

The determination for fee purchase versus easement is dependent on the amount of impact associated with the highest and best use of the property. For instance, if a pasture used for livestock was to be flooded on a frequent basis as a result of the project, and render the pasture unsuitable to raise livestock, that type of situation may constitute a fee purchase. Likewise, if only portions of a pasture were subject to flooding but the overall pasture remained suitable to raise livestock, that type of situation may constitute a flowage easement.

After the appraisal is complete, the sponsors will contact the respective landowners to make an offer on the property based on the appraised value. Once the selling price is set, the landowner conveys fee ownership or easement rights to the sponsor, which is recorded by the Mason County assessor. Then, the landowner is paid.

When easements are used instead of fee purchase, a deed restriction is placed on the property title, but the land remains privately owned after the project construction is complete. The easement protects the ecosystem restoration habitat improvement in perpetuity. Access to these privately owned lands is controlled by the landowner.

PM8	**Commenter:**
Verbal at public meeting 3/20/2014	**Blase Gorny**

Comment:

I'm going to piss off a lot of my friends in the room right now. I've been in the valley for 44 years now and I've seen everything happen. I know all of the stories. I was on the flood board for years and years and years, too. So I've been through it all.

I think there's a lot of merit to this plan. I think that we really have no choice. These are not the people that are - that refused to dredge the river saying we can't do anything. It's primarily the Corps of Engineers. You're responding to that. I don't know what else we can do. So I think we should seriously take a look at this. There's things that look pretty good on there. There's some things that I don't particularly agree with. But I think there's general merit in the whole thing.

1

USACE response:

1: Comment noted.

PM9	Commenter:
Verbal at public meeting 3/20/2014	Rich Geiger

Comment:

My name is Rich Geiger. I'm with the Mason Conservation District and I've been involved with the study since it started up, well actually before 2006. And there's a few things I heard tonight I think it's time for folks to hear the rest of the story because there is a bigger story here. This is not just - or this is not the end of what is being proposed, but rather this is what we call Corps-sized projects, the big ones where we need federal assistance to get funded and carry them out. What we also have - and I brought it here this evening - is a longer list of projects that will - that are being proposed for the valley and being funded by other means. And one of the ones I wanted to announce especially was Ten-Acre Creek for Paul Hunter's place. We haven't lost visibility of need for that. We just decided that it was something that was better carried out on a local level than trying to get the Corps involved on what's essentially a simple project. But we have a lot of these simple projects identified. 1

So far as funding is concerned, I do not think that the valley has ever been in a better position so far as seeing funding for actual work getting done as we are now. We are - or the Corps is requesting 41 million. That's their estimate. And at 35 percent, the county share is about 14 million and that is about the level that other watersheds in the state are being funded for major watershed restoration plans. So that money is identified. You've got a real chance to go forward and do work. And we will be talking to folks about these additional projects and try to get them - try to get them off the ground. We've got a planning horizon now through 2019, and it's probably going to take longer than that. 2

But there is more going on than simply these projects. And we are looking at your properties. We're listening. We want to tell you especially some of these questions like with the side channels for Swift and Hunter Creek - or Hunter Creek and Weaver Creek, we're listening very closely to what you have to say about what the impact might be on your property. But what we do ask is if you would just let the surveyors on your property and let us have a look, that will move - that will keep things moving forward rather than grinding to a halt after what's been a very long effort and holding up work that's been accomplished by other folks who really want to see the Skokomish Valley thrive. And I guess that's it. Thank you. 3

USACE response:

1: Various Federal and State agencies as well as local entities are working within their individual authorities and within specific areas of the Basin to implement restoration activities throughout the upper and lower watersheds. There are a number of proposed present and future restoration projects for the Skokomish River Basin, including many that are not part of the Corps' recommended plan. As discussed in the comment, there are numerous restoration projects that have already been identified and are generally smaller in scale, which could be easily implemented by a local entity. These smaller-scale projects paired with the Corps' recommended plan will produce positive, cumulative effects across the Basin.

Mason County, the Skokomish Tribe, and Mason Conservation District intend to pursue many projects not included in the final Federal Plan over the next several years. Preliminary design and environmental impacts have been completed and assessed for most under this Integrated Feasibility Report and Environmental Impact Statement. Grant funds will be pursued to complete final design and construction

of these important projects. Completing these projects at the local level will likely enable local sponsors to move more quickly and cost-effectively.

2: The cost estimate of the recommended plan has been updated based on refined designs included in the Final Feasibility Report/Environmental Impact Statement.

3: See Master Response 1 and Master Response 2.

PM10	Commenter:
Verbal at public meeting 3/20/2014	Bob Albaugh

Comment:

Can you pull that screen back up that showed the different channels in yellow? And Rich, we had talked about this in the last meeting. And thank you for bringing up that this has been going on since 2006. Now it's 2014. We're looking at 2019 to get something done. And I don't know how many millions of dollars have been spent on the research part of this. I'll leave that at that. 1

J.R. Hunter had brought up a point at the last meeting that each of these little things . . . And by the way, these are represented - not yellow part but the white part, those are fields. Those are agriculture. This is for Hunter Creek and Weaver Creek. Why is it called Hunter Creek? Agriculture from that family built this. That's why they named it after him. They're talking about digging the ditch through the middle of these agricultural fields and fencing it.

I understand what you're saying about trying to get on board. But that great big white elephant up above the number 39 is causing these other problems. You can't run a cross fence - and Janie brought this up at the last meeting as well - over very good agricultural land and expect people to still be able to sustain and farm it. How can that make sense to anybody in this room, anybody in this room, to fence those areas? There's crops. There's cattle. There's all kinds of things that has happened on this ground, like Bill Senior said, for over a hundred years. You can't expect that when the big problem is in that river. That's my comment. Thank you. 2

USACE response:

1: The Corps acknowledges that this study has required considerable time and resources. In October 2012 the study was rescoped and accelerated, which was intended to reduce study costs and timelines. Since this rescoping, the study has made considerable progress and maintains momentum. The study is anticipated to be complete in Fall 2015. However, Congressional authorization and appropriation is required before this project is constructed. Following completion of the Final Feasibility Report and Environmental Impact Statement, the Corps will forward the project recommendation to Congress for their review. If Congress endorses the recommendation, it is anticipated that they would provide authorization for construction in a Water Resources Development Act, which is typically passed every 2-7 years. The authority to construct, however, does not equate to the funding for the design and construction phase, which would be addressed annually in the Federal budget and biannually in the state budget.

2: See Master Response 1, Master Response 2, and Master Response 5.

PM11	Commenter:
Verbal at public meeting 3/20/2014	Art Tozier

Comment:

I've been a resident of the Skokomish Valley since I was brought home in 1949. One of the things that I never hear anything about is the headlands of the Skokomish where the water comes from, the mountain ranges, the Olympic National Park, south mountain, north mountain, all of the drainage of the Skokomish. You've got Vance Creek. You've got Swift Creek. You've got north fork. You've got the south fork. You've got all of these tributaries in the valley. I'd like to ask anybody in this room tonight how many tons, how many pounds, of spongelike matter are on an acre of timbered forestland? Can any of you folks here answer that? Does spongelike matter retain any water? Can any of you folks answer to that? You're all well-educated I take it, have got college degrees. Well, spongelike matter in the forest is all of the decomposed material. Do you know how many tons, how many thousands of pounds? Is it a significant amount do you think? Would 150 tons, 300 thousand pounds per acre be any figure that you would want to work with? That's what's in spongelike matter in a forest. When you take that material off at a rate that's been stripped in the Olympic National Forest and in the headlands of the Skokomish Valley, you're not going to be able to hold the water; it's going to run off; instead of slowing the water down in the mountains and putting small pondlike series in, like in Europe or back in the Tennessee Valley area that they did, and then let the mountains and the water work together and then release that water when we had low flows instead of letting it come down on us all at once. 1

And standing in the middle of the Skokomish watershed on my berm the other day when I couldn't get out and get to work and we were locked in there for a while until I had finally one of my employees come out with an old one-ton truck and drive through two foot of water to get through to me so I could go back to town and pick up somebody, that water has gotta be slowed down before it ever gets to us. It isn't anything about what the valley can do with it. It's about slowing it down before it ever gets to us. 2

And I don't know where the Army Corps of Engineers ever got in the fish business. I thought the Army was in the business of protecting us. I thought you did projects. You know. I thought that's what it was all about. I thought you were like my brother's great ancestor, Andrew Tozier, that fought at the Battle of Gettysburg that was a flag soldier that was credited with helping turn that war. I feel like we're the same guy today trying to turn this tide. You guys never ever say anything about the habitat that we've created with those agricultural, verdant pieces of ground. One of the things that grows naturally out there that I would ask anybody if they know what grass or what cover crop grows really well in the Skokomish Valley. Anybody want to ask - anybody got a - throw it out there? We grow clover naturally. The federal government is now paying - I think it's in Missouri - $3 million to have Farmers go plant clover. Clover naturally comes into the Skokomish Valley and that beautiful drainage that we live in. What's the most primary thing that we're worried about today besides the fish? The honeybee. The honeybee. So if the Skokomish Valley was the last place on the face of the planet, there's only three percent of that's arable and farmable, that place in the Skokomish Valley could grow that clover and sustain those honeybees. Used to be that if you had honeybees in Mason County, you had to do what? Does anybody know what you had to do when you had 3

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honeybees in Mason County? You had to register those honeybees with the County Extension Agent. So if we don't have any honeybees, your kids, your grandkids, your parents, your grandparents, whoever, you guys here, won't have a Safeway store. You won't have a whole bunch of agriculturists fending off the battle of starvation.

Sixty percent of all of the fresh potable water is held in British Columbia. Three percent of the ground is arable. Pretty soon you guys aren't going to have any groceries. And like I said the last time I stood up, don't complain about a farmer when your mouth is full and your bellies are full. That's all I have to say.

I've got a lot more to say. But it's very distasteful and disdainful for me to be brought up in an agricultural community that has made a living - and I will quote Haldean Johnson (phonetic), better known as Doc, "Nobody knows what it's like until you make a living from underneath the dirt of your fingernails." And none of you folks have probably ever had to do that. Nobody here in . . . These jobs that you've got are in offices. You're not out on the ground.

You're not feeding cattle. You're not pulling weeds. You're not making crops grow. So you're right. With me the buck stops here. I'm like my relative, Andrew Tozier, at the Battle of Gettysburg. And he was a flag soldier that stood his ground. And it recounts in history that if he hadn't stood his ground and stayed the course that we would be living in a different world today. And that's what I'm afraid of is that for the rest of your kids and the rest of humanity, that you're going to live in a different world. Thank you for your time.

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USACE response:

1: Headwater streams are integral components of a healthy watershed with irreplaceable value for water quality and biodiversity of the whole system. Timber harvest methods have had measurable contributions of sediment to the Skokomish River. Over the past 20 years, the US Forest Service has updated timber harvest regulations and practices to be more environmentally sensitive to the ecological value of the headwater reaches. The upper reaches of the Skokomish watershed are under the control of the US Forest Service as well as Green Diamond Timber Company. While the Corps' study is recommending an ecosystem restoration plan for the Skokomish Valley, the synergistic efforts of those involved in restoration of the entire Skokomish River watershed will produce positive, cumulative effects across the Basin.

2: Upper watershed restoration began in Olympic National Forest in the mid-1990s with over 200 miles of roads decommissioned or stabilized, over 200 miles of upland soil stabilization, and nearly 4 miles of stream restoration. The proposed project component toward the upstream end of Skokomish Valley at River Miles 9 to 11 includes installation of log jams that should help with slowing flow and creating pools. Additionally, the US Forest Service installed over 30 large engineered log jams in the South Fork Skokomish River in 2010 in River Mile 12 to 13 with several purposes, one of which is to slow river flows.

3: See Master Response 5. In addition, the Corps is in the "fish business" because ecosystem restoration is one of the primary missions of the U.S. Army Corps of Engineers Civil Works program, under which the Skokomish River feasibility study is being conducted.

PM12	Commenter:
Verbal at public meeting 3/20/2014	Jens Stratton

Comment:
My name is Jens Stratton, and after hearing Mr. Tozier talk, I was a little inspired. I heard - I'm a real estate agent so I'm familiar with eminent domain. And I also [am] a small-scale hobby organic farmer so I have an appreciation for farming and high quality farmland, which Skokomish Valley is. And I know that the Army Corps of Engineers has a history of using eminent domain to take people's land. And this farmland - as the population approaches nine billion by 2030, this kind of land is going to be a high value commodity. So if they're going to declare eminent domain - which I guess apparently that's not the case in this situation but it has happened elsewhere - I would encourage the landowners to look into the value of farmland in the future here. Because by 2030, the population approaching nine billion, there is going to be a food shortage coming up. If there's any way we can retain high quality farmland for producing local crops in this area, I'm in favor of that.

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USACE response:

1: See Master Response 2 and Master Response 5. In addition, the Corps will not declare eminent domain for this ecosystem restoration project.

PM13	Commenter:
Verbal at public meeting 3/20/2014	Janie Kamin

Comment:
I kind of had my say at the last meeting. But again, when we started this project again in 2005, we were looking comprehensively at restoring the whole watershed. I worked very hard with the SWAT group and with the tribe and doing the upper watershed and lower watershed and doing complete restoration of the Skokomish River. And in the years that I haven't been involved in that, that complete restoration of the Skokomish River has turned into an ecosystem restoration. And when I look at what is being proposed, I have to say how much fish habitat do you need? And how much is enough? Because you're not - the projects that are being proposed are not really about restoring the river any longer. They're about creating additional fish habitat. And I don't see where this is restoring certainly in my family's fields, and I have not seen any project on Paul Hunter's. That's my homestead. I'm curious to see what you're proposing for that. But […] but you are creating habitat. You're not restoring habitat. Those were fields. Those were farm - agricultural fields for at least - over a hundred years. My family - I'm fifth generation from the valley. We'd hoped that we could continue. And my kids would love to live out in the valley. But at this point, again, there's been a building moratorium on there since 1997. There's very little we can do to be able to preserve our family farm and our heritage and our homesteads out there. This does nothing.

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And if you want buy-in from the people who live out there and whose lands that you're going to want to use, you've gotta have something in it for them. At this point, there's nothing in it for any of us, not really. I mean like I said, how much fish habitat do you actually need? And you're talking ecosystem. There are - as Art said, there's more than fish out there. And like Barb said, there's elk. You know. There's other animals besides the domesticated ones that we - that have lived out there, that we've raised out there. So again, if you want buy-in from the people in the valley, you've got to give them something in return. It would be nice if you were

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able.

Years ago, in 2006 I think, we spent at least $25,000. I don't know how much that was. We hired a hydrogeomorphologist to give us best available science so that we would be able to partially lift the building moratorium and allow some relief there. People live in floodplains all over the world. We should be able to live there and continue to farm there. And that's what I would have hoped from this plan and all these studies that have been put - that have been conducted in the last few years. It would be nice if there were more benefits rather than just creating fish habitat. Thank you.

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USACE response:

1: The Corps' recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed. There is a strong, united effort by Federal, State, and local agencies as well as the Skokomish Indian Tribe for holistic restoration of the Skokomish River Basin. Various Federal and State agencies as well as local entities are working within their individual authorities and within specific areas of the Basin to implement restoration activities throughout the upper and lower watersheds. While the Corps' study is recommending an ecosystem restoration plan for the Skokomish Valley, the synergistic efforts of those involved in restoration of the entire Skokomish River watershed will produce positive, cumulative effects across the Basin.

Mason County, the Skokomish Tribe, and Mason Conservation District intend to pursue many projects not included in the final Federal Plan over the next several years. Preliminary design and environmental impacts have been completed and assessed for most under this Integrated Feasibility Report and Environmental Impact Statement. Grant funds will be pursued to complete final design and construction of these important projects. Completing these projects at the local level will likely enable local sponsors to move more quickly and cost-effectively.

2: The Corps focuses restoration efforts toward examining which natural processes are impaired and how to most efficiently restore those ecosystem processes. Some of the problems identified include removal of large woody debris from the river channel, logging that removed trees for shading and wood recruitment to the channel, and small levees that reduced the total riparian area available for river flows. Restoring these aspects of natural processes has multiple benefits, including fish habitat as well as more natural hydraulics in the river channel.

Since salmon first began inhabiting the Puget Sound basin rivers as glaciers receded 10,000 years ago, habitat is viewed in a larger time scale than the period of human settlement and the onset of timber harvest and agriculture. Salmon and agriculture can certainly co-exist. Many areas not in agricultural use can be restored for greater fish productivity. The Corps does not set population recovery goals as this is the purview of other Federal, State, and local agencies and tribes. The Corps provides Federal project funds and expertise to non-Federal project partners with holistic ecosystem restoration goals.

3: See Master Response 2. In addition, the Corps is currently working to identify the lands needed for/affected by the project footprint. Once the project footprint has been determined, the Corps Real Estate Division identifies the minimal real estate interest (fee purchase, easement, etc.) required for each affected parcel and completes an appraisal to determine the value of affected properties. After the appraisal is complete, the sponsors will contact the respective landowners to make an offer on the property based on the appraised value. Once the selling price is set, the landowner conveys fee

ownership or easement rights to the sponsor, which is recorded by the Mason County assessor. Then, the landowner is paid.

4: Mason County code currently prohibits construction of new structures or the expansion of existing structures within the floodway. Zones A and A2 of the Skokomish River, Vance Creek, and tributaries are designated as floodway due to special flood risk associated with avulsion based on 1998 flood maps and best available modeling at the time of ordinance adoption.

A new hydraulic model was completed as part of the development of the Feasibility Report/EIS. This model was provided to FEMA to incorporate in map updates and Draft maps have been presented for agency review. Once the maps have been adopted by the County, a change to County code may result in a change of floodway designation allowing for some expanded development.

E1 **via email 3/26/2014**	**Commenter:** **Jeffrey Gaeckle**

Comment:

To whom it may concern,

The area of eelgrass (Zostera marina L.) currently listed on page 81 in the January 2014 version of the DRAFT Integrated Feasibility Report and Environmental Impact Statement report is incorrect. Based on the Washington State's Submerged Vegetation Monitoring Program's (SVMP) methodology, there are seven sample sites that make up the entire extent of Annas Bay. To date, the SVMP has only sampled three of these sites and the Draft FR/EIS (Jan 2014) only presents 2008 data (4.3 ha = 10 acres) from one of these sites (hdc2383-Annas Bay). Sampling conducted in 2010 at hdc2380-Skokomish Flats and hdc2381-Skokomish Flats West found 88.2 (217.9 ac) and 34.6 ha (85.5 ac) of eelgrass, respectively. Although, there are no eelgrass area data available for the other four sites, sources indicate eelgrass was present at all of the sites. The Marine Vegetation Atlas (http://mva.apphb.com/index.html# <http://mva.apphb.com/index.html> , must be opened in anything but MS Explorer) identifies three other sources of data including the SVMP reports. These include:

1) Berry, H., J. R. Harper, T. F. Mumford Jr., B. E. Bookheim, A. T. Sewell, L. J. Tamayo. 2000. The Washington State ShoreZone Inventory User's Manual. Nearshore Habitat Program, Washington State Department of Natural Resources, Olympia, WA. 23pp.
2) Thom, R. M., and L. Hallum. 1990. Long-term changes in the areal extent of tidal marshes, eelgrass meadows and kelp forests of Puget Sound. Wetland Ecosystem Team, Fisheries Research Institute, School of Fisheries, University of Washington, Seattle, WA.
3) Washington State Department of Ecology. 1979. Coastal Zone Atlas of Washington State: Volumes 1 - 12. State of Washington Department of Ecology, Olympia, Washington.

Other eelgrass data can be acquired from The Skokomish Indian Tribe and USGS who conducted a thorough mapping project of the Skokomish Delta in 2013.

Finally, another concern with the report is the lack of any review of excess turbidity from the proposed project and the effects the excess turbidity may have on submerged aquatic plants (e.g., eelgrass) along the Skokomish Delta. Will the project require monitoring of submerged

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aquatic plants or photosynthetically available radiation (light) along the Skokomish Delta to demonstrate that project activities cause no net loss of habitat function in the eelgrass?

Thank you for taking my comments into consideration.
Jeffrey L. Gaeckle, Ph.D.
Seagrass Ecologist
Nearshore Habitat Program, Aquatic Resources Division
Washington State Department of Natural Resources (DNR)

USACE response:

1: The Corps appreciates the notification of an inaccurate element in the report. The 2013 figure from the WDFW database has been removed from the Final Feasibility Report/EIS. The primary source of information on extent of eelgrass is via email with staff at the Washington Department of Natural Resources assigned to the Submerged Vegetation Monitoring Program. The Corps requested the most recent data available from this team and was provided the information that appears in the report. Only one of the eelgrass monitoring sites was included as a figure in the report to serve as a representation of the sampling and to show the increase from 2005 to 2010 rather than providing a comprehensive report.

During preparation of the report, the Corps was not aware that the Marine Vegetation Atlas could not be viewed in MS Explorer. This internet browser is the only browser software approved for use on Department of Defense computers, so it only appeared as a non-functional website. Now that the information has been shared that another browser is required, Corps staff has sought out another method to view the Atlas and consulted the other sources referenced. The Final Feasibility Report/EIS has been revised accordingly.

2: The Final Feasibility Report/EIS has been revised to include a statement of effects of turbidity from the riverbed excavation alternatives. Thank you for pointing out the lack of information.

E2	**Commenter:**
via email 3/28/2014	**Jason Ragan**

Comment:
To whom It may concern, to the best of my knowledge, the Mason County Commissioners first wrote a letter to the Army Corp of Engineers in 1939. They were requesting assistance with the flooding problems caused by the Skokomish river at that time. Over the 7.5 decades since that time, the watershed has continued to decline in quality. Many millions of dollars have been spent studying the situation, and many families have had to leave the fertile lands of the valley. The quality of life is still declining to this day. The reason I started with this is so that you might begin to understand why some people are so angry and frustrated with the slow pace, and inaction of the latest study. As we attend public meetings, we see the changing faces of government employees come and go. Some genuinely care about finding a solution, most are just doing a job and looking for their next promotion. As a 5th generation valley resident, I am raising my kids here, and am hope full that they might get the chance to raise the 7th generation in this beautiful place.

I understand that the current scope of the project is an Environmental Restoration project, but

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when speaking with people that live there, keep in mind that the valley is also habitat for people. It is a residential area, and productive agricultural land, Not just salmon habitat.

The Skokomish Valley is the largest agricultural area in Mason County and the Skokomish river is the largest freshwater tributary to Hood Canal. Hood Canal has dissolved oxygen and water quality issues. I also want to point out that agricultural production in the Skokomish Valley is way down from historical levels. The Mason Conservation District has historical records in reference to this fact. Both of these declines are due in large part to the frequency and severity of flooding. Sadly, the Army Corp has only looked at the conditions in the Valley as they currently exist. Furthermore, this study does not seem to consider the impacts to Hood Canal. When the river floods so frequently, nutrients from septic systems, animal manure, and other sources are flushed into Hood Canal. As I understand it, flooding conditions will continue after the proposed work is complete. This exacerbates the low dissolved oxygen problems in Southern Hood Canal, and causes frequent closures to the shellfish growing beds on the Skokomish tide flats. 2 3

Was the rivers impact to Hood Canal considered?

If the rivers impact to Hood Canal was not considered, why?

Are there places in the valley that flooding will get worse if some of these projects are implemented? 4

What will happen specifically to the valley if nothing more is done? 5

Regarding “project 9”, is the Washington State DOT going to be ok with additional water flow under that particular bridge? 6

What I need to see, is a solution that takes into account the fact that the Skokomish valley is an important part of Mason County. It is worth investing in because it has many benefits to the surrounding community, not just fish habitat. Work on this issue needs to be done as quickly as possible. Conditions are getting worse in the middle parts of the valley at an alarming rate. The river water needs a healthy channel to flow in and it does not belong in farmers’ fields, for many reasons. 7

I hope to see more detailed design of some of the proposed projects in the near future. I do believe that some of them will help reduce flooding, but only if something is done very soon. 8

Due to the fact that the Army Corp has decided it is too expensive to remove gravel, will any of the proposed projects allow the local sponsors to work on gravel removal over a longer period of time? It is my strong opinion that if a small scale effort had been going on over the past 30-40 years, conditions would be much better. There is a demand for gravel and it can be removed in a responsible way. If we can start a local effort to remove some sediment from the river channel now, we will begin to make a difference. If we continue to study it and talk about it, we will not improve conditions. 9

Thank you for taking the time to read this.

USACE response:

1: The Corps acknowledges that this study has required considerable time and resources. In October 2012 the study was rescoped and accelerated, which was intended to reduce study costs and timelines. Since this rescoping, the study has made considerable progress and maintains momentum. The study is anticipated to be complete in Fall 2015.

2: See Master Response 5.

3: Corps feasibility studies consider existing conditions to identify problems and opportunities rather than looking at how conditions may have existed at some point in the past for intensity of human development or for abundance of fish and wildlife populations. The objective for ecosystem restoration projects is not to restore conditions as they may have existed in the past but to restore natural processes that support ecological resources.

The Corps does not typically have authority to study or attempt to resolve problems relating to water quality; therefore, the problem of low dissolved oxygen in Hood Canal is outside the Skokomish Basin study area for this feasibility study. Water quality issues are under the purview of the US Environmental Protection Agency and the Washington Department of Ecology.

4: The recommended plan is designed for flooding to occur similar to existing conditions. It is also designed to avoid increasing downstream flood risks in the Skokomish Valley.

5: The "Future Without-Project Condition" is the most likely condition in the study area if no Federal (Corps) action is taken. In the future without-project condition, sediment accumulation is expected to continue to reduce the channel capacities of the mainstem and South Fork Skokomish Rivers as well as Vance Creek. Flooding in the Skokomish Valley is expected to become even more frequent, but only small increases in flood depths are likely due to the broad floodplain in the valley. Continuing sediment accumulation is expected to cause the subsurface flows in the South Fork and Vance Creek during the late summer/early fall to become more frequent and last longer. A channel avulsion that would create an entirely new channel is possible within 20 years.

6: The existing Highway 101 Bridge in the vicinity of "Project 9" is estimated to be adequate in width and height to convey flows associated with this restoration project. The Corps and sponsors will coordinate with the Washington State Department of Transportation as designs are finalized to ensure bridge capacity is adequate to convey additional flows.

7: See Master Response 5.

8: Feasibility-level designs (approximately 35% designs) are presented in Appendix H of the Final Feasibility Report/Environmental Impact Statement. More refined designs (65%, 95%, etc.) will be completed during the Pre-Construction, Engineering, and Design phase.

9: There is an opportunity for local sponsors to work on gravel removal over a longer period of time; these actions could be implemented independently of the recommendations included in the Corps' feasibility study. However, permits from the appropriate Federal, state, and local authorities would be required for activities in, over, under, or near waters of the United States. The Corps will continue to be available to Mason County and the Skokomish Indian Tribe to ensure any proposed actions are

complimentary to the recommended restoration plan.

E3	Commenter:
via email 3/29/2014	Mali Krivor

Comment:

I wish to state my objection to nearly every tentatively selected plan but most especially I object to plans #28, #31, #35, #40 and #43. These proposals may or may not help fish but the potential for harming people is too high. It has been stated that dredging the river would make the cost of disposing of the gravel too high yet it would seem that dredging could provide the best result for people and fish. The result of this 30+ year study is astoundingly illogical. The result seems as though nothing costs too much concerning fish, and everything costs to much concerning people. 1

If the amount of time and treasure had been spent on a dredging and gravel disposal plan, the poorly function river system might be flushing properly by now and the county may have had a continuing source of revenue. 2

Bah, this plan is madness! Worse, it is now put forth that "these plans are it, take it or leave it". So be it.

Mali J. Krivor, Co-Owner
Skokomish Farms Inc.

USACE response:

1: See Master Response 1 and Master Response 2.

2: See Master Response 4.

E4	Commenter:
via email 3/30/2014	Alann Krivor

Comment:

As a group of 12 owners and spouses on the north side of the Skokomish River we have listened to the Corps of Engineers plans to correct the problems of flooding issues of the Skokomish River. Your latest plan is to remove the car dike on our lands, and to allow the South Fork to flow through and adjacent to our lands. As president of both the Skokomish Farms Owners Association and Skokomish Farms, Inc., we oppose and cannot permit removal of the dike designated as Plan 31 in the Skokomish GI as it provides specific protection for our land and farming operations.

The car dike was constructed by the Richert family, the former owners of our farm, to prevent flooding of the farm's south fields. We purchased the farm in 2008, and subdivided the farm into 19 - 40 acre parcels of which 12 have been sold. With the guidance of Washington State University and the Mason Conservation District it is our intent to use these south fields for vegetable crops, orchards and vineyards. 1

Nine of the 12 parcels will be severely impacted by the removal of the car dike. These fields will become a flood plain and completely unusable for our agricultural purposes. Therefore, on behalf of all the Skokomish Farms owners we will oppose any removal of the car dike.

We will investigate the dredging the South Fork and Main Stem of the Skokomish River. We firmly believe the dredging can be of benefit to the river, the fish, and financially to the Skokomish Tribe and the Skokomish Valley landowners. We know that there are many studies opposing dredging. But we also know that dredging can be very beneficial to fish populations if done correctly. Dredging can provide pools thereby greatly improving fish and marine life habitat as certain studies indicate.

As a principal in the development of Skokomish Farms, I have been active in the land development of over 14,000 acres in Idaho, Montana and Washington for more than 40 years and speak from experience.

Thank you,
Alann Krivor
President/CEO
Skokomish Farms, Inc.

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USACE response:

1: See Master Response 2.

2: Comment noted.

E5	**Commenter:**
via email 4/6/2014	**David Kregenow**

Comment:

"the non-Federal sponsors and study teams have agreed to continue to pursue a single purpose (ecosystem restoration) feasibility study. Although the study is a single-purpose study focusing on ecosystem restoration, there is a potential for ecosystem projects that secondarily meet flood risk management goals. Additionally, local and State government agencies will continue locally funded flood damage reduction efforts to achieve local flood risk management goals, such as preserving local business, communities, and historic land uses." Page 1

We can agree with this objective, provided there is due consideration of public input for the use of public funds, and the objective of flood control is not abandoned in favor solely of ecosystem restoration. The problems of the ecosystem and flooding are inter-related, due to sediment deposition in the river and altered flow rates. A plan that fails to address the built-up sediment in the river addresses, marginally, ecosystem problems and neglects the shared public concerns for, and public funding of, flooding problems in the region.

"The Feasibility Study for the Skokomish River Basin is being conducted under the Authority of Section 209 of the River and Harbor Act of 1962, Public Law 87-874 (Puget Sound and Adjacent Waters):

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"… in the interest of flood control, navigation, and other uses and related resources."
"Seattle District Office Council has confirmed the appropriateness of this authority with USACE Headquarters Office of Council. The Act's reference to "other water uses and related land resources" provides sufficient authority to study ecosystem restoration opportunities in the Skokomish River Basin." Page 2

However, I would like to believe that the District Office Council did not give blanket authority to do as the Sponsors chose with Federal Resources. I would hope that the District Council, and hence the people of the United States, agree that this particular use of public funds is in agreement with the Act. Specifically, a set of actions that do nothing to control flooding or navigation for $41 million needs to be publicly debated, or at least authorized by the agency responsible for the Act.

2

"The purpose of the feasibility report is to identify the plan that reasonably maximizes ecosystem restoration benefits, is technically feasible, and preserves environmental and cultural values." Page 6

Section 2.1 Problems and Opportunities
We agree that there are several factors contributing to habitat degradation. The largest and most obvious, is the sediment deposition from upstream logging and reduced flows that create simultaneously flooding problems and "One reach of the South Fork Skokomish River near the North Fork confluence started running subsurface in the late summer months (figure 2-1, top row) about 10 years ago." Pages 7-8

3

2.5 Planning Objectives
"Provide year-round passage for fish species around the confluence of the North Fork and South Fork Skokomish River for the 50-year period of analysis." Page 13
This is a long way from where this started and from whence the Act authorizes the use of public funds. If the project has abandoned the objective of flood control in favor of ecosystem restoration, then the Sponsors need to find an act more pertinent to ecosystem restoration.

4

2.6 Planning Constraints
"Due to the history and controversy surrounding this settlement agreement, USACE will not propose structural modifications to Cushman Dam, including dam removal, flow modifications, or operation adjustments …"
However, these issues are inter-related so rather than address the root causes of the problems, you are introducing Federal funding that impacts private property. Federal projects, and lack of commercial environmental regulation created this problem. Keep your solutions limited to the root causes.

5

"The special flood risk zone is designated as a floodway and an avulsion risk area, which imposes restrictions on new structures, existing structures, water flow modification structures, bridges, and roadways."
However, as a Sponsor, Mason County has the ability to modify its Flood Ordinance in the interest of this project in support of the region's objectives, which appear to include both ecosystem restoration and flood control.

6

"Proposed projects will avoid negative effects to tribal interests." **What exactly are the tribal interests?**

7

Page 14
2.7 Public Scoping Comments and Resources of Concern
"While many public scoping comments were related to the flooding problems in the study area, the non-Federal sponsors and study team have agreed to continue to pursue a single-purpose study focusing on ecosystem restoration only." **That is not exactly what you said in Chapter 1. Page 14**
"Comments encouraged channel restoration to improve habitat, as well as to alleviate flooding." Page 14
Somehow, then, the study sponsors have co-opted the public's right to use public funds and determined that a use of $41 million of public funds, designated for flood control, can be used to invade private property to restore fish habitat while doing nothing to reduce flooding, fish stranding, or the fundamental underlying problems of excess material in the river bed and insufficient flows.

8

3.4 Initial Array of Alternatives
The following sentence is associated with several discussions of potential dredging operations:
"Dredged material would be placed in the estuary and nearshore zone of Annas Bay which would constitute beneficial reuse of material and would provide suitable hard substrate for shellfish attachement." Page 20
This length of transport also is costly. There should be consideration of alternative solutions such as more local use of the dredged material. Many of the areas farms could use gravel for roads, for instance. Material could be deposited in low-lying areas to simultaneously address flooding issues, preserve agricultural land, and still improve fish habitat.

9

Base #3: NorthFork/South Fork Confluence: Car Body Levee Removal
"This base proposes removal of the levee on the north side of the mainstream near the original North Fork confluence. This base primarily addresses the project objective of restoring a continuous low flow channel near the confluence and to a lesser extent the objective of improving the quantity, quality, and complexity of pool habitat in the river. Mainstem flows would be diverted into the North Fork channel and reenter the mainstem at the confluence location. This would bypass the subsurface flow reach and provide improved fish migration. A portion of flood flows would stay in the old channel. Installed LWD would direct flow in the new channel and improve fish habitat. Periodic maintenance may be necessary to remove sediment accumulations from the new channel." Page 21

Since this Base was deemed cost ineffective by the Corps, and then forced back into contention by the Sponsors, and ultimately selected as the best option, it deserves careful scrutiny. The car body levee was put in place to address the flooding of the agricultural lands. Were it not for the deposition of sediment in the mainstem, flooding would not likely be an issue and the levee would not have been built. Is there any evidence that the river would have followed this path originally, before the influence of man such as sediment deposition. We are really talking about what we are trying to restore here. I don't think anyone objects to removing car bodies. However, one could replace them with engineered levees built with dredged materials from the river bed such that the channel flows continuously and the agricultural land is preserved.

10

In addition, the use of LWD to redirect the river is ironic since previous private owners attempts to do exactly this have been deemed unlawful and forced to be removed.
Finally, the belief that this base is sustainable is highly suspect. Given apparent rate of deposition in the river from upstream sources, and the low flow state, it seems unlikely that creating a new channel in this way will be sustainable without continued management of deposited material.

3.6 Focused Array Alternatives
"Based on an evaluation of the initial array of alternatives using the decision criteria outlined in Table 3-4, the Corps PDT recommended carrying Bases #1, #2, and #5 forward into the focused array of alternatives because they meet the study objectives and have the largest anticipated benefits to species of concern in the Basin. In addition, the study sponsors requested that Base #3 be carried forward into the focused array because the Car Body Levee removal would allow natural river processes to be restored in a sustainable way." Page 25

Where in Base #3 is there any analysis of natural river processes being restored in a sustainable way? Base #3 seems least natural in that it fails to address the primary problem of excess sediment in the river causing underground flow. Where is the analysis that says this redirection of flows is natural, beneficial to the ecosystem or the local population, or is sustainable? There may be other species adversely affected by this plan. The plan might easily create alternative flooding and side channel problems leading to increased fish stranding.

Increments
Project #28 clearly includes the construction of new levees. Hence, one must consider levees an acceptable management practice in other areas as well. The Car Body levee appears objectionable because it used car bodies rather than other artificial means of controlling flooding. You already stated on Page 21 that there are "no HTRW concerns at the car body levee." Hence, the environmental impact is based upon the presence of car bodies and not on the presence of a man-made structure or levee.

11

3.7.1 Cost Estimates
Based upon the alternative considerations raised above, such as alternative uses for dredged material from the river channel and increased maintenance estimates for Base #3 due to the high likelihood of additional debris deposition, these cost estimates are biased in favor of Base #3, an option only still under consideration due to the local Sponsors insistence. Page 29
If the process had only considered Bases #1, #2, and #5 as deemed appropriate by the Corps, and the Increments, we would have a very different final recommendation. Based upon Table 3-6, Bases #1 and #5 would have to be eliminated since their estimated costs exceed $41 million, leaving only Base #2 plus a selection of Increments. Page 30

12

3.7.2 Environmental Outputs
This is a classic "black box" analysis where the public has no opportunity to scrutinize what is deemed environmentally beneficial. The cofactors created by such modeling are arbitrary unless rigourously developed, and it is no information is presented as to how this model was developed or how it could possibly accommodate all the pertinent environmental factors in a study areas of this size with this many projects under consideration.

13

"Placement of dredged material in the Skokomish estuary and nearshore zone appeared as the most feasible disposal option (other options included disposal in a nearby quarry or open water disposal)." Page 31

Again, there does not appear to have been due consideration of options such as road and infrastructure improvements on adjacent agricultural lands, or habitat and agricultural improvements through the use of engineered levees with re-purposed riverbed material.

14

Table 3-8. Cost Effective Plans Pages 33-34
No mention of Base #2, and Base #2 plus Increments is included. Base #2 was the only financially viable alternative offered by the Corps, yet is has been excluded from consideration in the final analysis.

<u>From this point forward, the presented analysis focuses on reasonable considerations that need to be repeated with the inclusion of Base #2, and Base #3 as an Increment.</u>

15

USACE response:

1: The Corps' recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed. While the Corps' feasibility study focuses solely on ecosystem restoration, local and State governments may continue to pursue the objective of flood risk management. There is a strong, united effort by Federal, State, and local agencies as well as the Skokomish Indian Tribe for holistic restoration of the Skokomish River Basin. Various Federal and State agencies as well as local entities are working within their individual authorities and within specific areas of the Basin to implement restoration or flood risk management activities throughout the upper and lower watersheds. The public will continue to be involved as these activities come to fruition.

Mason County, the Skokomish Tribe, and Mason Conservation District intend to pursue many projects not included in the final Federal Plan over the next several years. Preliminary design and environmental impacts have been completed and assessed for most under this Integrated Feasibility Report and Environmental Impact Statement. Grant funds will be pursued to complete final design and construction of these important projects. Completing these projects at the local level will likely enable local sponsors to move more quickly and cost-effectively.

2: Congressional authorization and appropriation is required before this project is constructed. Following completion of the Final Feasibility Report and Environmental Impact Statement, the Corps will forward the project recommendation to Congress for their review. If Congress endorses the recommendation, it is anticipated that they would provide authorization for construction in a Water Resources Development Act, which is typically passed every 2 to 7 years. The authority to construct, however, does not equate to the funding for the design and construction phase, which would be addressed annually in the federal budget and biannually in the state budget.

3: Comment noted.

4: See Master Response 6. Also refer to comment response 2 for additional detail regarding Congressional authorization and appropriation required before the design and construction phases can

occur.

5: The Corps' ecosystem restoration policies indicate that ecosystem restoration and protection initiatives should be conceived in the context of broader watershed or regional water resources management programs and objectives, which may involve contributive actions by other Federal and non-Federal agencies and other stakeholders. There may be instances where components of ecosystem restoration problems or opportunities are better addressed by other agencies through their missions and programs, which is the case for activities related to Cushman Dam. The Corps is not a signatory of the Cushman Settlement Agreement; future activities at Cushman Dam will be coordinated and implemented by the appropriate agencies as identified in the agreement.

6: Mason County code currently prohibits construction of new structures or the expansion of existing structures within the floodway. Zones A and A2 of the Skokomish River, Vance Creek, and tributaries are designated as floodway due to special flood risk associated with avulsion based on 1998 flood maps and best available modeling at the time of ordinance adoption.

A new hydraulic model was completed as part of the development of the Feasibility Report/EIS. This model was provided to FEMA to incorporate in map updates and Draft maps have been presented for agency review. Once the maps have been adopted by the County, a change to County code may result in a change of floodway designation allowing for some expanded development.

7: Tribal interests include the multiple species of fish and shellfish resources in the Skokomish River, which play an integral part of tribal culture, religion, and physical sustenance. The Skokomish Tribe has treaty-protected harvest rights within their Tribe's usual and accustomed (U&A) harvest area, which reflects the historical region in which finfish, shellfish, and other natural resources were collected. As a Federal agency, the Corps has a Federal trust responsibility to act in the Tribes' best interests, including duties to protect Tribal lands and cultural and natural resources.

8: See Master Response 6. Also refer to comment response 2 for additional detail regarding Congressional authorization and appropriation required before the design and construction phases can occur.

9: See Master Response 4.

10: Base #3 was not deemed cost ineffective by the Corps. It was evaluated early in the study process and carried forward at the request of the study sponsors before costs or environmental benefits were calculated.

There is evidence that the river would have followed the North Fork path originally; this reach was an active channel in the 1930s and prior to 2003, the North Fork and South Fork confluence was located near River Mile 9. During a flood in 2003, the car body levee was breached near this confluence, diverting the North fork and moving the confluence downstream nearly 1 ½ miles to River Mile 7.7.
Replacing the car body levee with an engineered levee does not meet the ecosystem restoration goals of the study, as construction of a new levee in this area would continue to impede natural river processes. Additionally, levees could not be built with dredged materials from the riverbed. The use of dredged spoils for levee construction is not a preferable practice because river alluvium in the study area is typically coarse grained with little to no fines content. These materials will exhibit a high permeability and will not be effective in the levee's primary purpose of excluding flood waters. Please

refer to Master Response 4 for additional information regarding reuse of dredged materials for levees.

Large woody debris will be placed adjacent to the diversion of the South Fork into the North Fork to assist in keeping low flows in the diverted channel and to prevent the main channel from migrating around the diversion. This wood will encourage recruitment and aid in formation of the newly diverted channel.

Aiming for process-based restoration, in which human-made stressors (e.g., levees) are removed from the landscape, has an inherent goal of little to no operations and maintenance costs. The new mainstem channel included in the recommended plan is intended to be environmentally self-sustaining. It is anticipated that the new channel will aggrade, eventually meandering across the floodplain. This natural meandering process will develop a complex series of stream habitats that will be beneficial to salmon and other fish. This base is designed to work with natural river processes (including aggradation) to provide sustainable habitat benefits over time.

11: The Bureau of Reclamation, the US Fish and Wildlife Service, and the Corps have identified the Car Body Levee as causing the most significant flow constriction in the lower river, and at nearly one mile long, represents one of the largest human-constructed stressors in the mainstem Skokomish River. The Corps' interpretation of the hydraulic modeling provided by the Bureau of Reclamation indicates removal of this levee would allow year-round flow through a connected river channel, by-passing the reach of the mainstem river that goes dry in late summer. This action restores year-round fish passage for upstream and downstream migrations.

The Car Body Levee's impact to the river is the nearly one mile of constriction of river flows that are not able to follow a natural river course due to the levee presence. The Corps indentified fewer than 5 cars at this site and determined the car bodies themselves are causing minimal effects relative to the overall length of the levee. The other levees proposed for construction at River Mile 9 and near the Grange are in close proximity to private residences and serve the purpose of directing flows back toward the mainstem river channel.

12: The parametric cost estimates presented in Section 3.7.1 and Appendix K of the Draft Feasibility Report/Environmental Impact Statement have undergone numerous internal and external reviews and are not biased toward a particular Base or alternative. Cost estimates account for future operations and maintenance, which is estimated to be minimal for Base #3. As discussed in #10 above, Base #3 is intended to be environmentally self-sustaining. It is anticipated that the new channel will aggrade, eventually meandering across the floodplain. This natural meandering process will develop a complex series of stream habitats that will be beneficial to salmon and other fish. This base is designed to work with natural river processes (including aggradation) to provide sustainable habitat benefits over time. The cost effective and incremental cost analysis will not be repeated with the inclusion of Base #2.

13: The environmental outputs model was developed by the U.S. Army Engineering Research and Development Center (ERDC) and underwent rigorous review and approval for use by the Corps' Ecosystem Restoration Planning Center of Expertise and the USACE Headquarters Model Approval Panel. Please refer to Appendix F of the Feasibility Report for additional information about model development, assessment approach, and limitations of the model.

14. See Master Response 4.

15: Base #2 was screened out from further evaluation before costs and benefits were analyzed. Thus, Base #2 was not included in the cost effective and incremental cost analysis presented in Table 3-8. The cost effective and incremental cost analysis will not be repeated with the inclusion of Base #2.

E6 via email 4/7/2014	Commenter: L.B. Kregenow

Comment:
I am a landowner on the north side of the Skokomish. I have reviewed the Corps' proposal and have the following comments:

Please reopen your evaluation to fully consider increasing the water flow in the North Fork when the Skokomish is in danger of going underground and/or dredging. 1

Please evaluate the possibility of renting land in the valley on which to stockpile dredged materials to make available to valley residents for local projects. 2

Please calculate the costs shifted to affected landowners as a result of foreseeable flooding and the loss of agricultural land due to flooding and trenching.

In the absence of increased water flow or dredging, the Skokomish will remain a wide, rocky, beach head at the confluence with all of the attendant flooding, silting, and habitat issues. The Corps has not evaluated the effects of the influx of soils from our newly-exposed fields and the potential erosion along the old course of the North Fork if the cars are removed and the waters are redirected into a new course with the confluence further to the east. These considerations should be addressed. 3

The trench system proposed for the lands lying to the south of the Skokomish will decimate some of the best farm land in the county. The phenomenal rate at which we are losing agricultural land in this part of the State is troubling, and the effects of this trenching in propelling that trend should at least be acknowledged. 4

USACE response:

1: All alternatives were formulated to allow for year-round fish passage near the confluence, and all achieve this objective by different means (diversion of flows around subsurface reach, removal of gravel in subsurface reach, etc.). The purpose of Base #3 (removal of the car body levee and diverting mainstem flows into the North Fork) is intended to restore a continuous low flow channel near the confluence, allowing for year-round fish passage via the North Fork channel when mainstem flows run subsurface in the summer months. Diverting mainstem flows into the North Fork channel would bypass the subsurface flow reach and provide improved fish migration. Dredging was not carried forward as part of the Corps' recommended plan and further evaluation of dredging alternatives as part of the feasibility study will not occur.

2: See Master Response 4.

3: The scope of the feasibility study does not include quantitative analysis or evaluation of costs shifted to affected landowners as a result of foreseeable flooding in the future without-project condition or the

loss of agricultural land due to trenching (note: "trenching" projects have been removed from the recommended plan; see Master Response 1). The Corps evaluation does, however, include an analysis of the effects of the car body levee removal on lands in the North Fork area; refer to Section 4.3.1.2 and Section 4.3.2.2 of the Final Feasibility Report/Environmental Impact statement for a summary of these effects.

4: See Master Response 1.

E7 via email 4/7/2014	Commenter: Derek Booth

Comment:
To Whom It May Concern:
I have been retained as an expert for six Ranching families who live along the Mainstem of the Skokomish River. I also have been retained for a class action lawsuit that includes landowners who have smaller parcels in the Skokomish Valley. In all, I believe these two groups represent almost all of the private property owners in the Skokomish Valley.

By way of introduction, I am a stream geomorphologist by both training and professional background. I obtained a Masters of Science in Geology at Stanford University in 1980 and a doctorate in Geology from the University of Washington in 1984. I am currently an Affiliate Professor at the University of Washington and was previously employed there on a full-time basis with faculty appointments in the Department of Civil & Environmental Engineering and the Department of Earth & Space Sciences from 1995–2005. I am a member of the American Geophysical Union and the Geological Society of America, where I became an elected Fellow in 1999, and I am the Senior Editor of the international scientific journal *Quaternary Research*, published by the Elsevier Science Press. I have taught fluvial geomorphology at a graduate level at the University of Washington and the University of California Santa Barbara since 1985, and at multiple professional workshops for private consultants and public agencies, most recently for the Washington Department of Fish and Wildlife in 2013. I was also the author of the "Stillwater Sciences" comment letter to Mr. Patrick Cagney on the USACE's General Investigation Feasibility Study for the Skokomish River basin dated October 25, 2010.
I have reviewed the above-noted DFR/EIS (dated January 2014) and have the following comments about the introductory sections and the various alternatives. I did not analyze the economic sections of the DFR/EIS, as they lie outside of my area of expertise and are not relevant to my comments.

I note that earlier publications by the Corps of Engineers ("COE") with regard to the Skokomish River recognized the flooding concerns of the human population and the consequences that have resulted from the rising of the groundwater table in the valley. In particular, Appendix M of this DFR/EIS, in summarizing the public comments on the 2010 GI Feasibility Study, notes "The Skokomish General Investigation Study should focus on implementing solutions designed to alleviate flooding and lower the elevated water table to address the concerns of many comments received" (p. 13). I fully support this focus (as did, apparently, the 2010 effort). The current analysis is limited to "ecosystem restoration," however, in response to a perceived low benefit-cost ratio with respect to flood damage response and an apparent belief that "implementation of previous flood risk management projects by Mason County including

1

residential acquisitions (buy-outs), strict development/zoning regulations, implementation of a flood warning system and evacuation plan, and raising of structures in the floodplain" (DFR/EIS, 2014, p. 1) will provide adequate relief to landowners and residents of the valley. I see no clear evidence that this will be the case with respect to flooding, and none whatsoever with respect to high (and rising) groundwater levels, which (as I noted in my 2010 letter) are imposing substantial costs on valley residents, as well as on the once-healthy anadromous fishery of this key river system. The actions proposed in the DFR/EIS not only ignore these issues (as affirmed by the explicitly single-purpose character of this plan) but also threaten to make them worse—surely not an intended outcome, but one that is likely to result from the approach you have chosen. I am hopeful there is still ample time and opportunity to reconsider this strategy before progressing further with implementation. 1

I have some additional, more specific comments that are keyed to specific sections:

Section 2.1

The section begins with a discussion of the "Problems" created in the Skokomish River since the arrival of Euro-Americans with early settlement changing the wilderness to agricultural lands. I consider it largely complete but somewhat uneven in its emphasis and analysis. The Skokomish River is considered a classic example of watershed-scale degradation (e.g., Stover and Montgomery, 2001, *Channel change and flooding, Skokomish River, Washington*: J. Hydrol. 243: 272-286), and pp. 7-8 of the DFR/EIS does acknowledge the profound role of intensive logging and altered flow regimes in ecosystem decline. However, much detail in this section is devoted to problematic man-made structures (levees and revetments, riparian alteration, removal of large woody debris, bridge crossings), and in total they imply removal of all man-made structures would lead to the restoration of the land to its pre-Euro-American status. This is not only impractical but also false--and will lead to the destruction of some of the most valuable agricultural land in the State.

I encourage you to refer to, and consider closely, the guidance provided in the recent book *Stream and Watershed Restoration* (Roni and Beechie, 2013, Wiley-Blackwell), which notes some of the most common reasons for failure of restoration efforts that are particularly relevant here (p. 7). The current list of proposed projects in the DFR/EIS does not align with this guidance, which leads me to conclude that the outcome is also likely to be as predicted: 2

- Not addressing the root cause(s);
- Not recognizing upstream processes; and
- Failure to get adequate support from public and private organizations.

In general, Section 2.1 does include all of the widely-recognized causes of salmon decline in the Skokomish River watershed (along with a few of likely marginal importance). In particular, it discusses the role of the gradual aggradation of the River, noting that it now dries up for nearly two months in the summer and that 10 years ago the endangered fish populations dropped dramatically. These changes are undisputedly from the catastrophic aggradation in the River (see points 2, 3, and 4 on pp. 9–10), with primary causation from the combination of tremendously increased sediment loads from the South Fork and dramatically reduced flows down the North Fork. Given the temporal and causal connections between the dramatic decline in fish populations and channel aggradation, dropping any plans to address this aggradation appears myopic and contrary to all current scientific guidance on "process-based

restoration." I understand the challenges involved in tackling this issue directly—but ignoring it in favor of more "feasible" but ultimately doomed channel manipulations to (temporarily) reconnect side channels and tributaries seems ill-advised.

I can find no attempt to quantify the magnitude of direct anthropogenic causes (e.g., clearing of riparian forest or levee construction) in comparison to channel aggradation from increased sediment loads and the loss of natural River flows from the construction of the Cushman Dam. Thus, the long-term effectiveness of the Tentatively Selected Plan (TSP) actions is simply assumed for this ecosystem without any specific analysis of current aggradation and flooding conditions. Although the treatments listed for the TSP have proven effective in some other river and stream system, the Skokomish River has some significant overriding factors that have yet to be addressed or quantified, and that are left untouched by *any* of the proposed actions. Thus, the value of these restoration actions here presently lacks factual support in this particular River, and in several cases they also carry significant economic or other social impacts that have yet to be adequately addressed. 2

Section 2.2

Although I appreciate the Corps limitations to work "within the defined study areas to enact solutions within the Corp's authority" (DFR/EIS, p. 10), the watershed itself knows no such restraints. Actions that conform to this administrative guidance but that do not address underlying causes of degradation will have questionable value, at best. 3

Section 2.3

There is no dispute that the Skokomish River supports vital aquatic resources but those resources include agricultural and ranching uses, which once co-existed with a healthy and productive fishery for many decades, but are now being ignored. The descriptions in Section 2.3.2 do not at all balance the cultural and physical sustenance of the agricultural and ranching families that have lived along the River for generations. The section correctly notes that "The decline of these particularly sensitive species indicates degradation of environmental health of the Skokomish River and Hood Canal aquatic systems" (p. 11), but there is little in the proposed plan that will actually address the key causes of that degradation, and much that will cause significant harm to valley residents while providing minimal long-term benefits to the fisheries, the Tribe, or anyone else. The groups identified in Section 2.3.3 have long discussed the aggradation and flooding problems it causes, but which are now being ignored. The "multiple partnerships" identified are significant for the absence of any real participation or invitation to participate that included the private property owners in the Valley. "Wetlands," without any analysis, are set out as having "technical significance," and yet other analyses or methods to assess such significance are not identified or discussed. 4

Section 2.5

The section continues the previous assumptions that year-round passage for fish, reconnection of side channels, restoration of habitat, and creation of pools can occur while ignoring the impact of the current and ongoing aggradation in the River. It is doubtful that any of these features can be established or maintained with the current condition of the River. 5

Section 2.7

This section recognizes that aggradation and flooding were identified in the scoping process and then states the "non-federal sponsors and study team" agreed to pursue "a single purpose 6

study focusing on ecosystem restoration only." This is admittedly a decision made without any public input (indeed, contrary to the input documented in Appendix M) and not obviously based upon identified scientific concerns.

Section 5
Without conducting an extensive analysis of the Tentatively Selected Plan, I would like to offer a few comments on the eight identified actions:

Numbers 1, 4, and 5 (levee removal and setback projects #s 3, 37, 28): In general, levee setbacks (and/or removal) have proven beneficial in many riverine settings by allowing greater floodplain access by floodwaters, development of a more diverse riparian ecosystem, and reduced direct anthropogenic impacts. However, these projects have greatest success where high sediment loads do not simply lead to greater deposition and aggradation (negating much of the anticipated benefits) and where the land placed on the inside of the new levee is not presently occupied by high-value uses. Neither of these conditions applies over much of the area proposed under these projects, suggesting that their effectiveness may be limited and the need for landowner agreement is paramount.

Number 2 (Skokomish GI project #35): Upstream LWD installation is generally advantageous on both local and (if at a large enough extent) systemic scales. The present project, however, appears to focus on using large woody debris simply to keep the river in the center of the channel, thus reducing the risk of river bank erosion on private property. Since this is a reach of the South Fork where the river is dropping its bed load, it may not be the best location for achieving any systemic benefits—for these, extensive diversity-encouraging structures farther upstream in the South Fork would be most effective, which in turn might capture some of the sediment load now being delivered to the mainstem. I understand that not all of these upstream areas fall under the purview of the Corps' present analysis, but this plan should provide strong support for any such upstream efforts that would serve to rehabilitate the watershed itself, as well as to reduce the excessive sediment load presently moving down the channel of the South Fork.

Number 3, 6, 7, and 8 (projects project #s 9, 39, 40, and 43): In general, these side-channel restoration and tributary reconnection projects are likely to be temporary palliatives at best, while leaving the underlying causes of ecosystem degradation largely (or entirely) untouched. I encourage reconsideration of these projects, not because they are entirely without merit but because they are likely to impose permanent impacts to the variety of land uses in the valley while providing only modest and surely temporary ecosystem benefits.

I hope these comments are useful to you in moving forward with a plan for restoration in the lower Skokomish River valley that is both effective in achieving its primary goal of ecosystem restoration while maintaining the landowner activities that once successfully coexisted with a healthy salmonid population for decades. I wish you success in this effort.

7

USACE response:

1: See Master Response 3. In addition, the actions included in the recommended plan are designed to maintain the existing levels of flood risk management in the study area; the recommended plan is not designed to exacerbate flooding.

2: Per Corps ecosystem restoration policy, the intent of ecosystem restoration is to partially or fully reestablish the attributes of a naturalistic, functioning, and self-regulating system. The concept behind the study and recommended plan is process-based restoration, where the river and tributaries will be modified once and then natural processes will be allowed to determine future conditions. The DFR/EIS did not explicitly state or intend to imply that removal of all man-made structures would lead to the restoration of the land to its pre-Euro-American status.

The Corps agrees that independently developed ecosystem restoration projects, especially those formulated without a system context, may only partially and temporarily address symptoms of a chronic systemic problem. The recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed and was conceived as part of a comprehensive restoration effort to help address more chronic, systemic problems such as aggradation.

It is correct that an extensive inventory of sediment sources and supply rates in the upper South Fork and Vance Creek watersheds was not completed and is not part of the study scope. To manage this risk, 2-dimensional (2-D) hydraulic modeling and 1-D sediment transport modeling of the recommended plan has been completed and is presented in Appendix H of the Final Feasibility Report/Environmental Impact Statement. This modeling used a range of sediment inflows to account for varying rates of future sediment supply from upstream sources.

3: The Corps' ecosystem restoration policies indicate that ecosystem restoration and protection initiatives should be conceived in the context of broader watershed or regional water resources management programs and objectives, which may involve contributive actions by other Federal and non-Federal agencies and other stakeholders. There may be instances where components of ecosystem restoration problems or opportunities are better addressed by other agencies through their missions and programs. Thus, the Corps will continue to work within the defined study area to enact solutions within the Corps' mission areas and authority.

4: See Master Response 5. In addition, the "multiple partnerships" described in Section 2.3.3 do include the private property owners in the Valley; the Corps and local sponsors have worked to engage landowners throughout the study, including multiple public meetings, listening sessions, and public review of the Draft Feasibility Report/Environmental Impact Statement. This coordination and outreach will continue. Section 2.3.3, Public Significance, has been revised to better describe the importance of agricultural and ranching uses in the Skokomish Valley. As stated in the response to #2 above, the recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed and was conceived as part of a comprehensive restoration effort to help address more chronic, systemic problems such as aggradation.

Wetlands are recognized as especially valuable landscape features warranting protection under the Clean Water Act Section 404. The Corps elected to very briefly summarize the ecological value of wetlands in the Skokomish watershed rather than write at length on the values widely recognized among the technical disciplines included in natural resources management.

5: See Master Response 3.

6: See response to item 2 above.

7: The Corps anticipates that the locations where levees are breached or removed will resemble the surrounding forested riparian areas after several years rather than becoming buried in riverborne sediments that have tended to deposit at other locations. Since the release of the Draft Feasibility Report/EIS, the Corps and non-Federal sponsors have been working with property owners on the potential alignments for the proposed setback levees at River Mile 9 and near the Grange. No project component will move forward without landowner willingness.

The objectives for installation of the Upstream Large Woody Debris (LWD) project component are to add complexity of habitat for rearing salmonids, create scour pools for juvenile and adult salmonids, and to trap sediment in this reach of the river. The Corps aims to restore natural processes rather than to keep a river in any particular channel, and structures for the sole purpose of protecting private property from erosion are not justified under an ecosystem restoration authority. The US Forest Service has installed over 30 structures in River Mile 12 to 13 and preliminary results show sediment is being trapped and pools are deepening. The Upstream LWD project component should add to these benefits.

The two tributary project components, Hunter and Weaver Creeks, have been eliminated from the proposal through coordination with stakeholders and private property owners during feasibility-level design phase. The side-channel reconnection component has undergone feasibility-level design. This large wetland area is a former segment of the mainstem river, but was disconnected when the river changed its main course. The inlet and outlet of this former channel will be re-opened and will have large logs buried within the banks of the openings. This will provide a flow connection during the winter months. This type of off-channel habitat has proven highly productive for rearing juvenile coho salmon. Further, restoration literature recommends prioritizing reconnecting isolated high-quality habitat. Velocity through these narrow openings is anticipated to avoid settling of sediments. The cost of opening these two connections and adding wood to the banks is minimal compared to the large area of wetland and low-velocity channel that will become available to salmon making this a very cost-effective project component. Additionally, no agricultural land is lost or converted to complete this project component.

E8 **via email 4/8/2014**	**Commenter:** **Bureau of Indian Affairs**

Comment:

Thank you for the opportunity to review the draft Integrated Feasibility Report and Environmental Impact Statement (Report) and for your efforts to develop a meaningful set of measures to address longstanding human caused impacts in the Skokomish River basin.

As acknowledged in your report, the Skokomish River has been an integral part of Skokomish Indian tribal culture and society since long before the Treaty of Point-No-Point was signed in 1855 and degradation from European and American settlers has been ongoing from the 1850s until today. We found your report and appendices to be thorough and we generally concur with your characterization of the proposed measures. We also appreciate your recognition that a failure to act would significantly impact the cultural and spiritual identity of the Skokomish Tribe (Tribe) (see section 4.6.1.1), although we note that management of the Skokomish River basin over the last 150 years has already significantly impacted the Tribe. 1

It is clear from your Report and from similar work that we had commissioned during the

Cushman Project relicensing process, that mainstem channel aggradation is the most significant ongoing impact in the Skokomish River basin to both fish and shellfish assemblages and to the use of certain reservation lands that are continually exposed to a higher water table and frequent floods. On the North Fork, the substantive reductions in flow caused by Cushman Dam No. 2 also led to a near collapse of fisheries in that reach. None of these impacts, we should note, were either caused by or substantially benefited the Skokomish Tribe.

Both a loss of North Fork flows and mainstem channel aggradation were identified and addressed to some degree in our 2009 Settlement Agreement for the Cushman Project (Settlement). Pursuant to that Settlement, Tacoma Power agreed to provide base level flows and additional, higher level channel formation and sediment transport flows - the latter of which are triggered when upstream runoff exceeds a predetermined level. Channel formation and sediment transport flows are intended to simulate freshets in terms of timing, frequency and duration of flow events as determined by in-season conditions. However, these flows are limited to mainstem channel capacity which is currently substantially less than that necessary to mobilize sediment. As such, the North Fork will not benefit from these improvements to the degree anticipated and aggradation will continue to occur in the mainstem – even after implementation of your tentatively selected plan (TSP). 2

Sediment transport flows released from Cushman Dam No. 2 were not intended to create channel capacity in the mainstem. They were intended to maintain channel capacity once created through other means. Our research concluded that the only means of reducing aggradation was to physically remove mainstem sediment, similar to the measures that you evaluated in your Riverbed Excavation Alternatives. We were not able to determine, however, whether you considered the implementation of Cushman sediment transport flows in your discussion of these alternatives and whether or not those flows would reduce the frequency of needed maintenance dredging. Please add this discussion to the final version of your Report. It is possible that sediment transport flows released from Cushman Dam pursuant to our Settlement would reduce the annual cost of implementing the Riverbed Excavation Alternatives making them more economically feasible. 3

Unfortunately, without increased mainstem channel capacity, improvements anticipated from the channel formation flows in the North Fork will not likely be realized. This result should also be included in your discussion of environmental impacts.

We understand the cost sharing requirements of any actions that the Corps of Engineers (Corps) may implement in the basin and understand that substantive dredging is likely beyond the means of your sponsors. For this reason, you modified the priority objectives from addressing ecosystem restoration and flood risk management to focusing on the single purpose of ecosystem restoration. Aggradation, as you know, is difficult to assign to one of these categories as both flood risk management and ecosystem restoration are dependent, in large part, on mainstem channel capacity. Until channel capacity is improved, any restoration measures implemented should only be considered a partial fix. Please make it clear in your report that recovery of listed species and substantive improvements to the natural production of unlisted species is unlikely to occur without improvements in channel capacity. 4

These concerns should not prevent implementation of the TSP as those measures should improve conditions at the North Fork South Fork confluence (which is needed regardless of channel capacity issues in the mainstem), but no party should be under the impression that

implementation of the TSP alone is sufficient to address the impacts caused by the last 150 years of basin management.

Please also consider the following specific comments:

1. Executive Summary: In the 3rd paragraph you identify increased channel capacity and providing a year-round channel for fish passage as your two priority objectives (page vii). However in the 5th paragraph (page viii), you state that your recommended restoration plan "reasonably maximizes environmental benefits" without discussing its ability to meet either of your two objectives. Please clarify in the Executive Summary that the TSP reflects a modified scope limited to ecosystem restoration only and that improvements to channel capacity was largely beyond the means of the project sponsors. As noted above, please also make it clear in the Summary, that the TSP will only provide limited benefits so long as channel capacity remains an issue. 5

2. Section 1.1, page 1 (3rd paragraph): In this paragraph you state that ecosystem restoration and flood risk management was the initial focus of the feasibility study but that flood risk management was eliminated due to a number of measures implemented by Mason County and others. Please note that none of the measures identified in the Report that have been implemented by Mason County and others will increase channel capacity and that although economic impacts may be reduced due to these measures, channel aggradation will continue, reservation flooding will continue and likely increase in frequency, and the overall effectiveness of any environmental restoration measures will be limited. 6

3. Section 3.4, Base #1 (page 20): You estimate that maintenance dredging will be required at 20-year intervals to remove accumulated sediment. As noted above, please discuss how Cushman sediment transport flows may or may not decrease needed maintenance dredging. 7

4. Section 3.4, Base #2 (page 21): You state that sediment removal from River Mile (RM) 7.3 to 8.8 would increase discharge capacity by about 4,000 cubic feet per second and lower flood elevations by up to one foot. Please clarify how additional capacity from RM 7.3 to 8.8 would be translated in the lower mainstem – that is, how would increasing capacity at RM 7.3 affect channel carrying capacity at RM 0 through RM 7.3 and what, if any differences would there be in lower river flooding? The statement "this base addresses the project objectives on a much smaller scale than Base #1" is misleading as it would likely not provide the same benefits (regardless of scale). 8

5. Section 3.4 Base #5 (page 22): Please identify which impacts would continue to occur from RM 0 through RM 3.5 under this scenario. It is difficult to tell whether the impacts would be significant or whether they are minimal and could reasonably be left unaddressed for the long-term. 9

6. Section 3.9.2 (top of page 44): You state that fully meeting all objectives by recommending alternative #45 or #60 is not achievable, in part, given environmental considerations. We assume this statement is in reference to short-term (1-4 years) restoration impacts associated with dredging. Please further explain. The lower river is only marginally functioning at this time and likely not sufficient to allow recovery of listed fish species, to improve populations of unlisted fish species and shellfish, or to allow full recovery of the North Fork given limitations 10

to channel forming flows. How are short-term impacts balanced with long-term improvements?

7. Section 3.9.3, Alternative 45 (page 46): The risks of longer-term impacts to salmon spawning habitat seem exaggerated. Channel restoration projects have been successfully implemented for decades as have other measures that result in the eradication of most all life forms in a treated stream (e.g., application of piscicides). Please clearly explain the specific long-term impacts of concern, identify whether similar efforts have been conducted at other locations, and list the results of those efforts for comparison. 11

8. Section 3.9.3, Alternative 45 (page 46): Please further discuss your statement that "Resource agencies are not supportive of large-scale dredging for ecosystem restoration." Specifically, which resource agencies are making these statements and are they in specific regard to the mainstem Skokomish River? Although we concur that significant near-term impacts are likely from dredging, we believe those impacts are acceptable in certain cases based on existing conditions and the prognosis for long-term river recovery. In this particular case, a broader, specific discussion of the costs and benefits associated with dredging the mainstem Skokomish River is necessary as it would seem to be a required component of any process intending to return the Skokomish River basin to a properly functioning system. A discussion of measures that could be implemented during dredge operations to minimize adverse effects should also be included. 12

9. Section 3.9.3, Alternative 60 (page 47): Comments 7 and 8, above, are also applicable to alternative 60. 13

10. Section 3.9.4, page 48 (second paragraph), page 49 (1st full paragraph): Please provide definitions for "cost prohibitive" and "extremely cost prohibitive." The text states that these funding limitations specifically apply to Masson County and the Skokomish Tribe but we assume any such decision could be reconsidered if additional funding were available from other sources. 14

11. Section 4.2 (page 57): All of Tacoma Power's requirements are included in the Settlement and under its amended license. As discussed previously, several measures cannot be implemented until mainstem channel capacity is improved. Tacoma has agreed to provide some limited funding to implement habitat improvement measures but those funds are prioritized on the North Fork. Any additional funds provided to address flooding are in the amount of $150,000 annually, which, as you have identified, is not sufficient to substantively address mainstem channel conveyance capacity. Please acknowledge in your Report that any additional funds provided by Tacoma Power are unlikely to substantially increase mainstem channel capacity. 15

12. Section 4.3.1, page58 (2nd full paragraph): Flushing flows have not been "abandoned" as described in your Report. In fact, flushing flows could be available for system-wide benefits if channel capacity was improved. It is more accurate to state that flushing flows have not yet been implemented because of limited channel capacity. Incidentally, the $150,000 discussed in comment 11 is not available until the Settlement parties agree that flushing flows are ineffective and no longer a requirement of the license. 16

13. Section 4.4.1.2, page 75 (Riverbed Excavation): Please clarify short-term versus long-term impacts in this discussion and identify best practices that could offset the potential short-term impacts. Clarify the risks to salmonids from modified channel morphology over the long-term, explain why channel geometry could not be designed to address salmon spawning, and indicate why conditions conducive to spawning would not equilibrate over time. As mentioned earlier, channel modifications to promote spawning and rearing habitats are readily implemented throughout the Northwest. It is unclear why they would be considered detrimental in this situation. Although the amount of gravel removed from the mainstem Skokomish River would be significant, there is no indication – given the amount of gravel currently residing in the mainstem and the significant supply available over the long-term - that water flow through the hyporheic zone would be an issue. Please further explain why you think hyporheic would be a concern in this particular location. Also, you seem to suggest that the main reason for riverbed excavation is to address the fish stranding problem – although a concern, there are many, many benefits associated with riverbed excavation that should inform any decision on this topic. 17

14. Section 4.4.2.2, Benthic Macroinvertebrates (page 79): Although we agree that macroinvertebrate populations would be affected over the short-term, these affects are not likely to be as significant as would occur through other commonly implemented restoration measures (e.g., the use of piscicides – which is used in many locations throughout the Northwest to remove non-native species). Macroinvertebrates will likely recolonize fairly quickly. In any case, as you have noted in various places in the Report, young salmon are unlikely to spend much time in this area given existing conditions. As conditions improve, macroinvertebrate populations will increase and salmon rearing will benefit. 18

15. Section 4.4.4.2, Riverbed Excavation (page 88): Please see comment 13 above. Similar modifications should be made to this section. 19

16. Section 4.6.1.2, Riverbed Excavation Alternatives (page 93): Please see comment 13 above. Similar modifications should be made to this section. Also, the statement “This alternative has a high risk of negative effects on tribal resources” is confusing. In the previous sentence you state that these alternatives would benefit shellfish (the only alternatives that would benefit shellfish), and most all of the potential negative effects are short-term. Riverbed excavation is likely the only alternative that will help the Tribe recover lost natural resources, particularly on reservation lands. 20

Again, thank you for your efforts. The Skokomish River has significant issues and we found your analysis to be extremely helpful in understanding many of the potential restoration measures that could show improvement in the relatively short-term. We support implementation of the TSP as we believe it will help to address subsurface flow concerns at the confluence of the North Fork and South Fork Skokomish River. Additional measures to be implemented as part of the TSP should also provide needed habitat and may reduce the amount of aggradation in the mainstem to some small degree. However, until the mainstem is repaired, we are concerned that these measures will only provide limited improvements. 21

USACE response:

1: Comment noted.

2: The Corps agrees that the recommended plan will not directly benefit the North Fork and aggradation will continue to occur in the mainstem, even after implementation of the recommended plan. The recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed and was conceived as part of a comprehensive restoration effort to help address more chronic, systemic problems such as aggradation.

3: The alternatives analysis assumed that sediment transport flows would not be implemented in the future. Sediment transport flows could possibly decrease maintenance dredging requirements associated with the large-scale dredging alternatives by a marginal amount, but the Corps' analysis does not indicate that O&M for the large-scale dredging alternatives would decrease substantially if sediment transport flows were implemented in the future. As such, a minor reduction in O&M requirements would not reduce the annual cost of implementing the Riverbed Excavation alternatives to the extent required for them to be economically feasible.

4: As stated in the response to #2 above, the recommended plan is one element of an integrated restoration effort in the entire Skokomish River watershed and was conceived as part of a comprehensive restoration effort to help address more chronic, systemic problems such as aggradation. Implemented independently, the recommended plan will not fully recover listed species.

5: The Executive Summary has been revised to better reflect priority objectives, a scope limited to ecosystem restoration, and caveats about channel capacity.

6: Comment noted. Section 1.1 has been updated to direct the reader to Section 4.3.1 and Section 4.3.2, which further discuss the existing and forecasted flood conditions in the study area absent a Corps flood risk management project.

7: If Base #1 were implemented, there is a possibility that sediment transport flows could be implemented in the future. Sediment transport flows could possibly decrease maintenance dredging requirements by a marginal amount, but sediment transport analysis does not indicate that O&M for this Base would decrease substantially if sediment transport flows were implemented in the future.

8: Additional capacity from RM 7.3 to 8.8 would not significantly affect lower mainstem channel capacity. If implemented, Base #2 would produce only minor changes in downstream flood conditions.

9: If Base #5 were implemented, channel capacity and flood patterns would remain unchanged downstream of RM 3.5. In addition, bedload transport potential would not change downstream of RM 3.5. Sediment deposition can be expected to continue to occur in the channel for the foreseeable future. The overall deposition rate is predicted to be the same as the without-project rate, approximately 30,000 cubic yards per year. However, bedload transport would be altered with higher transport rates in the upstream reach and more sediment being transported farther downstream than occurs presently. This would change the sediment deposition distribution, shifting more deposition downstream.

10: The commenter is correct that it is the environmental impacts and risks of unintended consequences associated with dredging that make alternatives #45 and #60 not achievable. Table 3-14 in the Draft Feasibility Report/EIS indicates that these two alternatives only partially meet the acceptability criteria. Through the environmental coordination process during feasibility phase with

other Federal, State, and local entities and stakeholders including natural resources managers, the Corps determined that acquiring all of the necessary environmental compliance documentation from regulating agencies would not be possible. Some of these compliance requirements include the Endangered Species Act consultation process and Clean Water Act Section 401 certification.

Some of the environmental impacts include the following:

- Dredging removes the aquatic insects that live on and within the gravel, which means salmon, trout, and sculpin would have no food or significantly reduced food resources for at least one year and potentially up to five years as the longer-lived invertebrate species become reestablished.
- Dredging can de-stabilize the newly exposed surface of river substrate causing unpredictable quantities and locations of scour including upstream and downstream from the action area. This is considered a high risk for endangered salmon spawning areas that occur throughout the study area.
- Dredging can cause high levels of turbidity that risks suffocating fish and burying or excessive shading of aquatic vegetation in the estuary.
- Dredging in the river channel may inadvertently drain valuable wetland habitats that are in close proximity to the river and hydrologically connected causing loss of wetlands.
- The repeated maintenance dredging that would be required for these alternatives would be needed roughly every 20 years, which means the biological resources may never reach a stable equilibrium state, which hampers productivity at all trophic levels.

These two alternatives were ultimately not selected as the Tentatively Selected Plan due to the cost, not due to the risk of environmental impacts.

11: Literature consulted regarding risks to salmon spawning habitat include the following:

Collins, B. 1995. Riverine Gravel Mining in Washington State, Physical Effects with Implications for Salmonid Habitat, and Summary of Government Regulations. Prepared for the US Environmental Protection Agency

Harvey and Lisle. 1998. Effects of Suction Dredging on Streams: A Review and an Evaluation Strategy. Fisheries Volume 23, Issue 8, pages 8-17

Kondolf, Smeltzer, and Kimball. 2002. Freshwater Gravel Mining and Dredging Issues. Prepared for Washington Department of Fish and Wildlife, Washington Department of Ecology, and Washington Department of Transportation.

NOAA Fisheries. 2004. Sediment Removal from Freshwater Salmonid Habitat: Guidelines to NOAA Fisheries Staff for the Evaluation of Sediment Removal Actions from California Streams.

Pauley, Thomas, Marino, and Weigand. 1989. Evaluation of the Effects of Gravel Bar Scalping on Juvenile Salmonids in the Puyallup River Drainage. Cooperative Fishery Research Unit, University of Washington. Final Report to the Washington Department of Fisheries

The scale of dredging proposed in alternatives #45 and #60, at 5.5 miles and 9 miles respectively, is far greater than the typical type of operations analyzed in the literature cited above. Scale of effects is assumed to correlate to scale of disturbance. Effects are summarized in the response above. The Corps' evaluation is that dredging poses high risk to spawning salmon, especially to species listed under the Endangered Species Act.

12: The natural resource agencies consulted during preparation of the Draft Feasibility Report/EIS are

listed in Section 7.3. Specific recommendation against large-scale dredging of the Skokomish River came from National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, and Washington Department of Ecology, as well as Corps staff biologists. Four different local and regional salmonid recovery plans were consulted for restoration strategies and none included recommendations for large-scale dredging.

13: Please see the preceding responses.

14: The largest-scale dredging alternative is estimated to have an initial construction cost of approximately $200 million. Per Corps cost-sharing policies for construction of ecosystem restoration projects, the non-Federal sponsor(s) would be required to contribute 35% of the construction costs with Corps, and would also be responsible for all operations and maintenance activities associated with the alternative (estimated to be up to $80 million for the largest-scale dredging alternative). These non-Federal funding requirements are beyond the budget capacity of Mason County and the Skokomish Tribe, and are also likely beyond the means of local or State grant opportunities.

15: The Final Feasibility Report/Environmental Impact Statement acknowledges that any additional funds provided by Tacoma Power are unlikely to substantially increase mainstem channel capacity.

16: The Final Feasibility Report/Environmental Impact Statement includes a more accurate discussion of flushing flows, stating that they have not yet been implemented because of limited channel capacity.

17: As stated in earlier responses, the scale of disturbance proposed in Alternatives #45 and #60 is far greater than what has been already determined to have detrimental effects to salmonid habitat. These dredging alternatives might have been able to be designed to promote spawning and rearing habitats; however, even when these alternatives were designed in a least-cost method, they were still cost prohibitive and therefore not selected. Additionally, even with careful design of in-stream features that would cost much more than the least-cost design, there would still be a risk of scour and instability of remaining substrates. Because salmon have only one chance at spawning and populations are decreased in the Skokomish River, risk of unsuitable spawning habitat and/or loss of incubating eggs due to scour may have a significant effect on multiple year classes, which can then affect an entire population for many years.

18: When analyzing potential impacts to benthic macroinvertebrates in a lotic system, use of piscicides is not directly comparable to dredging due to the different susceptibilities of some invertebrate taxa to the use of chemicals, while all benthic taxa are removed in dredging operations. Furthermore, policies on use of piscicides recommend intervals of 3 to 10 years to allow recovery of invertebrate populations. Because salmon have only one to three years of rearing time in their riverine habitat and populations are decreased in the Skokomish River, risk of decreased food availability for more than one year due to loss of the food base through substrate removal may have a significant effect on multiple year classes, which can then affect an entire population for many years.

19: Please refer to previous responses.

20: The statement regarding risk to tribal resources is referring to the potential negative effects to salmon fisheries as listed in previous comment responses regarding effects to salmon from large-scale dredging operations.

21: Thank you for the statement of support for the TSP. The Corps recognizes it is not a complete solution for all ecosystem degradation in the river; it is intended to be one component of an overall integrated plan for the watershed.

M1 via letter 4/7/2014	Commenter: National Marine Fisheries Service

Comment:

Attached are our comments on the Corps' Draft report for Skokomish ecosystem restoration. We support ecosystem restoration for this river, which provides spawning and rearing habitat for several ESA-listed anadromous fishes. We appreciate the breadth of information in the Corps' Draft Feasibility Report. Proposals for ecosystem restoration in the Skokomish River are particularly important for us because the Skokomish is the sole missing watershed chapter of the Puget Sound Chinook Salmon Recovery Plan, which we approved in January 2007. We did not review the NEPA portion of your report, and have no comments on the DEIS.

The NMFS supports ecosystem restoration for this river, which provides spawning and rearing habitat for several ESA-listed anadromous fishes. We appreciate the breadth of information in the Corps' Draft Feasibility Report (Draft Report). Proposals for ecosystem restoration in the Skokomish River are particularly important for us because the Skokomish is the sole missing watershed chapter of the Puget Sound Chinook Salmon Recovery Plan, which we approved in January 2007. We also support the recommendations made by the U.S. Fish and Wildlife Service (USFWS) in their Fish and Wildlife Coordination Act report to the Corps (January 2014). 1

While we agree that human alteration of the channels and floodplain since the mid to late 1800s have resulted in severely impaired salmon habitats today, we believe a few additional parts of the story are important for understanding current and desired future conditions. Geologic factors make the lower 10 miles susceptible to flooding. First, the lower 10 miles of the valley have extraordinarily wide, level, and deep deposits of alluvium which are easily eroded following inattentive land use (see geomorphic and geologic reports cited below). Second, significant sources of sediments are delivered from riverbank landslides and headwaters. Third, tectonic land-level uplift at about rivermile 2.4 forced the channel to the southern valley wall, and likely exacerbates the extent of flooding across the low-relief floodplains upriver. In addition to these landform constraints, settlers over the past 160 years or so have cut trees, cleared channels, and placed non-engineered levees and some roads in locations that promoted erosion, flooding, and destabilized channels.

The BOR (2009) geomorphic report summarizes, "…within the last 2,000 years, the Skokomish River Valley is an aggradational environment. Holocene deposits along the Skokomish River form one broad surface throughout the valley and vary in age based on the lateral migration history of the Skokomish River." 2

A geologic study by Polenz et al. (2010b) reports depths of the extensive deposits of alluvium in the lower valley. They state that "at least 44 ft, and perhaps as much as 70 ft of alluvium has accumulated in the Skokomish Valley over the past 8,500 years." That report also describes a cross-valley geologic control (the Lucky Dog structure) that forces the river channel to the southern valley wall at about rivermile 2.4. That control is manifest as an uplifted berm, some

17+ ft above the floodplain. “If the Lucky Dog structure repeatedly raised the valley floor east of the Lucky Dog bog, additional alluvium would have gotten trapped west of the structure, thus potentially thickening the alluvium west of the structure. A maximum sediment volume estimate is therefore not implied by the available data. But a minimum volume estimate could be generated from the 44 ft minimum alluvial thickness, the width of the valley, and the volume of delta sediment above the paleo-alluvial plain implied by the sample. Such a sediment volume estimate may provide an interesting long-term comparison to historic attempts at assessing the impact of land use practices on sediment load in the modern Skokomish River.”

That report also states, “Consideration of historic flood records in the context of other evidence for tectonic activity in the Skokomish Valley suggests that tectonic land-level changes may contribute to frequent flooding on the Skokomish River...The persistent frequency of flooding favors gradual land level changes (creep) over sudden land level changing events as a possible tectonic contribution to flooding on the Skokomish River.” (Polenz et al. 2010b).

Before European settlement started in about 1850, we expect much of the low-relief lower valley had anastomosing channels with forested islands; channels packed with all sizes and ages of wood piles and jams; and, forested floodplains with many beaver ponds and relic channels. (See attached 1 page map excerpted from the BOR (2009) report that shows channel locations since 1861, earlier paleo-channel, and the Lucky Dog structure). We believe that pervasive actions by settlers lead to local and persistent erosion of the former islands, riverbanks and floodplains. Local erosion across the lower valley was triggered by (a) removing most standing riparian trees (which promoted extensive erosion of the floodplain as roots decayed), and (b) removing inchannel wood for many miles of channel (which de-stabilized river banks, bars, and beds). Throughout the lower valley, widespread erosion and persistent clearing of floodplains in turn resulted in the wide, shallow channels, deforested conditions and typical flooding observed since at least 1912.

Certainly the transport of sediments from headwaters and over-steepened riverbanks has contributed to lower valley aggradation, but we believe a significant trigger for historic aggradation is local erosion of riverbanks and floodplains within the lower valley. Our hypothesis is that late nineteenth and early twentieth century tree-clearing and agricultural activities transformed the lower 9+ miles from multi-thread channels with forested, stable banks and forested islands, into a wide shallow channel with eroding banks and few mature riparian trees.

Diverting substantial flows from the North Fork, starting in about 1926, likely encouraged lower valley aggradation by greatly reducing transport power. Further, levees and roads that were added without thought to maintaining riverine processes likely contributed to unstable channel conditions. Also, the landslides and similar unstable landforms along upper riverbanks of the South Fork below the canyon, i.e., about rivermile 11 mentioned in BOR (2009), are likely ongoing sources of sediments delivered to the lower river.

This perspective leads us to support the Draft Report’s ideas for restoring channel conditions and riparian planting, and we further recommend reestablishing forested islands and floodplains with fully stocked forests. This is also in agreement with the USFWS recommendation in Appendix A to reestablish a braided-channel pattern with islands. Because

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dredging is likely to be very disruptive for productive salmon habitats, with dredged channels soon refilled by high flows, we cannot support that approach.

We note the stock of Chinook salmon in the Skokomish River, while originating from Green River hatchery stock, and largely sustained by the local hatchery, is considered an independent population believed necessary for recovery of the ESU. As summarized in the most recent 5-year review of the ESU, that population continues to show low productivity and abundance, which is not surprising given the mix of severe challenges to that population (Ford ed., 2011). The 2013 fisheries Co-managers' report summarized the fraction of natural-origin Chinook salmon returning to the Skokomish River in 2012. "A preliminary estimate is that spawning escapement in the Skokomish River was comprised of about 87% hatchery-origin Chinook and 13% natural origin Chinook" (WDFW & Puget Sound Treaty Tribes, 2013). Because it is difficult to distinguish the local habitat effects on the Chinook salmon population from other effects, the potential that Skokomish ecosystem restoration will significantly help recovery of that population is uncertain. Nevertheless, all species of salmonids are expected to generally benefit from ecosystem restoration. 5

Channel conditions will become favorable for fish when roughness elements are restored (e.g., Engineered Log Jams (ELJs) and natural wood collections), side channels are stable, lateral bank erosion is greatly diminished by wood and riparian vegetation (not riprap), and functional floodplains are restored that include wetlands and dense cover of riparian trees and shrubs. Eventually, deeper channels and pools will become evident as channel banks and floodplains become stabilized by older forests. In-channel restoration actions should be planned as pilot studies to learn and adaptively manage for effective restoration.

While the expected time for restoration to become effective is not certain, ELJs on similar sized rivers (Elwha, SF Stillaguamish, Dungeness, and White rivers) have shown substantial influences on channel conditions within a few years of construction. Results of the early pilot studies on the Skokomish will enable adjustment of later extensive wood placement throughout the low gradient reaches of the main channel. Establishing older forests on the banks and floodplain can be accelerated by dense planting, limiting herbivory, and frequent surveys of stocking to allow early silvicultural intervention in the first decade or so. Ultimately, as much of the channel migration zone as possible should be dedicated to natural riparian function. 6

We support the priorities for reconnections, levee actions, and ELJs described in Appendix E, Table 4. We also support the four restoration monitoring objectives detailed in Appendix E. Implementing monitoring tied to these objectives will enable restoration effectiveness to be assessed. As described in the GeoEngineers, Inc. (2006) report, we also recommend reach assessments be completed, and results incorporated into project planning and design. 7

We note the Draft Report's summary of flooding history in Appendix B, Flooding and Sedimentation Baseline. "It is likely that aggradation was underway prior to 1912 as the frequent flooding experienced at that time suggests an undersized channel already existed." That perspective is consistent with our understanding of the geologic and early settlement factors summarized above. In addition, the modeling results of bedload distribution described in Figure 9 of Appendix B, i.e., that bedload does not move below about rivermile 3, are consistent with the idea that the uplifted berm at about rivermile 2.4 acts to collect sediment 8

and gradually raise the floodplain and riverbed upstream.

The Draft Report lacks a long-term socioeconomic vision for the lower river, recognizing that flooding will continue and the water table will likely keep rising, which will continue to challenge current agricultural practices and road management. Would a stronger emphasis to buy property within the channel migration zone (plus a riparian buffer zone) from interested landowners be money better spent for long term ecosystem restoration? Are landowners willing to work as a group to come up with a realistic land-use plan for the lower watershed to balance ecological, sociological and economic needs, given that flooding will continue indefinitely? As part of the ecosystem restoration, how many properties could be acquired and levees removed, which could then allow the river to start finding its own equilibrium? We also see an opportunity for floodplain education. In other venues, the Corps has pointed residents of floodplains to educational material and we encourage the Corps to mention that material (ASCE 2010) in the Final Report.

9

References

ASCE. 2010. So you live behind a levee. 17pp. Available from: http://content.asce.org/ASCELeveeGuide.html

BOR (Bureau of Reclamation). 2009. Geomorphic Analysis of the Skokomish River, Mason County, Washington. 138 pp.

Ford, M. J. (Ed.) 2011. Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest. U.S. Dept. of Commerce, NOAA Tech. Memo., NMFS-NWFSC-113, 281 p.

GeoEngineers, Inc. 2006. Channel Migration and Avulsion Potential Analyses Skokomish River Valley Mason County, Washington. File No. 2221-026-00.

Polenz, Michael; Czajkowski, J. L.; Legorreta Paulin, Gabriel; Contreras, T. A.; Miller, B. A.; Martin, M. E.; Walsh, T. J.; Logan, R. L.; Carson, R. J.; Johnson, C. N.; Skov, R. H.; Mahan, S. A.; Cohan, C. R., 2010a [revised 2011], Geologic map of the Skokomish Valley and Union 7.5-minute quadrangles, Mason County, Washington: Washington Division of Geology and Earth Resources Open File Report 2010-3, 1 sheet, scale 1:24,000, with 21 p. text.

Polenz, Michael; Contreras, T. A.; Czajkowski, J. L.; Legorreta Paulin, Gabriel; Miller, B. A.; Martin, M. E.; Walsh, T. J.; Logan, R. L.; Carson, R. J.; Johnson, C. N.; Skov, R. H.; Mahan, S. A.; Cohan, C. R., 2010b, Supplement to geologic maps of the Lilliwaup, Skokomish Valley, and Union 7.5-minute quadrangles, Mason County, Washington—Geologic setting and development around the Great Bend of Hood Canal: Washington Division of Geology and Earth Resources Open File Report 2010-5, 27 p.

Washington Department of Fish and Wildlife & Puget Sound Treaty Indian Tribes. 2013. Puget Sound Chinook Comprehensive Harvest Management Plan, Annual Report Covering the 2012-2013 Fishing Season. 114 p.

[Figure excerpted; available upon request]

USACE response:

1: Thank you for the statement of support for the TSP. The Corps appreciates the acknowledgment of context within the plan for recovery of Puget Sound Chinook. Additionally, the US Fish and Wildlife Service has provided a Final Fish and Wildlife Coordination Act report based on their review of the feasibility-level designs completed for the Final Feasibility Report/EIS. Please see Appendix L.

2: Thank you for providing additional background information on the geologic and human sources affecting the existing conditions.

3: Coordination with multiple natural resource agencies during feasibility-level design phase has resulted in design of larger engineered log jam structures and planting of conifers to reestablish forested islands and a braided-channel pattern with islands.

4: The Corps acknowledges that multiple natural resource agencies have provided input opposed to dredging due to its risk to salmon habitats.

5: The Corps appreciates validation of the assumption that all salmonid species should generally benefit from the proposed ecosystem restoration. The suggested methods have been incorporated into the feasibility level designs. Please see Appendix H of the Final Feasibility Report/EIS.

6: The River Mile 9 levee setback and Grange levee setback project components were designed for the maximum area allowed by landowners for the purpose of capturing as much channel migration zone as possible for natural riparian function.

7: Comment noted.

8: The Corps appreciates validation of a consistency in understanding and interpretation of reports available.

9: Local socio-economic planning is outside of Corps authorities and mission areas. Mason County representatives, as one of the two non-Federal sponsors for the project, have been working with local landowners.

M2 **via letter 4/7/2014**	**Commenter:** **Karen Willie on behalf of property owners**

Comment:

My law firm represents six ranching families who live along the Mainstem of the Skokomish River. We also represent a class of landowners who have small parcels in the Skokomish Valley. In all, we represent almost all of the private property owners in the Skokomish Valley.

We take issue with the assertion that the Corps of Engineers has the "study authority" to proceed with its project. On page 2 of the DEIS it states: "Seattle District Office of Council has confirmed the appropriateness of this [study] authority with USACE Headquarters Office of Council. The Act's reference to 'other water uses and related land resources' provides sufficient authority to study ecosystem restoration opportunities in the Skokomish River

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Basin."

Originally, the Corps of Engineers ("COE") had a flooding prevention alternative which addressed that the aggradation in the river as part of the study. That alternative has been dropped in the DEIS. What remains are all projects aimed at enhancing the river for fish habitat. Some of the projects will lead to further flooding of ranching properties that are designated as some of the most valuable in Washington state.

The grant of authority under Section 209 of the River and Harbor Act of 1962, Public Law 87-874 (Puget Sound Adjacent Waters) is in the opening language of the Act quoted at the top of page two. The authority granted to the COE is for "flood control and allied purposes." With the new, non-flooding scope of this DEIS, the COE is now outside of the authority of the River and Harbor Act of 1962. 1

USACE response:

1: See Master Response 3 and Master Response 6.

M3	**Commenter:**
via mail 4/5/2014	**Blase Gorny**

Comment:

I moved to the Skokomish Valley in 1970 and have lived there continuously since then. My property is directly across the river from the Richert/Krivor Skokomish Farms property. The north fork of the river flowed in directly behind my property. It has since changed to an old channel and joins the south fork closer to the church. The cars at the then confluence of north and south forks were put along the bank on the Richert side by the Richerts in 1971 (summer). The dyke behind my property prevented flooding of my neighborhood until 1994. Over the years the channel filled significantly in that area. Since 1994 the river has topped the dyke and flooded the neighborhood 6 or 8 times. There is also deep flow over Eells Hill Road in major flood events that also was never witnessed by me until 1994. For about 5 or 6 years now the river dries up (or flows underground) behind my property from about the Dips to the church. I have been able to walk on dry land across the river for up to a month in the summer. 1

Many of the proposed solutions to minimize major flooding of the Skokomish River make sense. Removal of cars, dykes on the old Richert property, setback dykes and minor dredging in critical places will help.

The proposed creation of minor channels on the large agricultural fields is likely to work, however, as proposed or understood by the large landowners it presents a farming nightmare. The ground water is so high now in a good 30% of those fields not that they are not farmable and full of swamp grass. To be able to initiate the fix the large landowners will need to be presented with a plan that is at least "called" in the name of agriculture. Good luck!

USACE response:

1: See Master Response 1. In addition, as described in the comment, some features of the recommended restoration plan are anticipated to provide ancillary flood risk management benefits.

M4 via mail 4/3/2014	Commenter: U.S. Department of the Interior
Comment: The Department of the Interior has reviewed the Draft Environmental Impact Statement for the Skokomish River Ecosystem Restoration, Mason County, Washington. The Department has no comments on the document at this time. We appreciate the opportunity to comment.	

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USACE response:
1: Comment noted.