6-14-14

Attn Engineers!

I just want to tell of my experience after living by the Skagit River (right next to the dike) for 65 years. We built a small house with ½ basement under it. The river was dredged every summer at different locations where the bed was built up during the winter.

The first couple of times when the river was very high, almost to top of dikes, we did not have any seepage in our basement. But later when they stopped dredging we had seepage - 9" the first time and then 12" the second time that the river was high and at flood stage.

All of the work they are doing

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ☐ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ☐ Putting a stamp on this form and sending by regular mail
- ☐ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

My recommendation is one should only consider the alternative, as per page 15-(1.3.1), 'Setback Entire Levee System'. The other 5 alternatives are not feasible, in my opinion. Any Bypass, Joe Leary Slough, Swinomish, or Fir Island, should not be done as anyone of these will remove valuable farmland, and most likely will divide current farm ownerships.

[signature]

05/19/2014

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: David N. Anderson Affiliation (Optional): _____

Address: 20105 Gina Marie Lane

City: Burlington State: WA Zip: 98233-5207

Email: vondavid@fidalgo.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

From:	Heidi Herder
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] comment on draft FR/EIS
Date:	Friday, June 20, 2014 1:18:58 PM

Ted Cook
Mount Vernon, WA

Thank you for your wonderful presentation of June 19. It was a nice overview and good to hear what others had to say.

What I picked up was:
-people want it to be fair, not a we win you lose scenario
-Burlington wants to protect commercial real estate
-protecting Burlington is artificially shifting the problem to the Samish basin
-how does water get off the flood plain and into the Sound?
-In 1903 it was evident that building in the flood plain was a bad choice

Here is my view of the problem. At flood stage the Nookachamps pool fills up, then the outflow has to be 200K cfs, or whatever the exact number is. Then, that flow has to get across the railroad and I-5 somewhere, then that flow has to get to the Sound somewhere. The engineer's job is to trace that path.

Two or three questions:
-what is the max cfs channel capacity at the railroad bridge?
-what is the max cfs channel capacity at the downtown MV bridge?
And, is this assuming water passes over the bridge deck and through the steel structure? Is that a code compliant way to pass flood water?
Once those numbers are known:
-the overflow over hwy 20 to the north is the 100 year flood minus the railroad bridge capacity.
-the overflow overtopping the dikes at riverbend to the west is the railroad bridge capacity minus the dowtown MV bridge capacity.

So, taking all that into consideration, I think the CULI is a good choice, but I think spilling water east of Sterling Hill is a bad idea.
Rather than ring dike the hospital, I believe a better plan would be to build a dike along hwy 20 and then north to Sterling Hill. Then build a dike from Sterling Hill just south of the Cook Rd. interchange. This would protect the hospital, the nursing home, many acres of farmland and houses, the eastern Samish, and most importantly, keeps the vital road link of Cook road to Sedro Wooley, since hwy 20 out of Burlington is submerged.
In this scenario, all the water spilling north is between Burlington business park and the Cook road containment levy. Once that 30cfs or so floods over I-5, however deep that would be, the water would spread out into Joe Leary Slough and the Samish River and into the Sound.

From an economic perspective I would hope for specific fairness. The people who recieve the benefits should pay for them, and the people who absorb the damages should be compensated. In the natural state, the 100 year flood went down Guages Slough. There is photographic evidence of this, and apparently this is where the railroad was naturally washed out when the capacity of their main bridge was exceeded in 100 year events. So, maybe, any property within a 1/2 mile of Guages Slough should be levied at the highest rate, properties that are removed from the 100 year flood at the next rate, and everyone else in the county at a lower rate, for this flood project.

And lastly, the National Flood Insurance Program has to be mathematically solvent, where insurance premiums are equal to claims. Right now, there is no economic case for building a project, because the risk premiums are a government subsidized welfare program, so the rates are cheaper than building. When the risk premiums accurately reflect damges, then communities can better see the rational payback on taxing themselves for flood projects.

From:	Lauren Wright
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River flood prevention project
Date:	Friday, June 20, 2014 10:53:10 AM

Hello, my name is Fred Wright, and I have lived in this valley for 62 years. I have seen floods and high water come and go, and have spent a lot of time on the river fishing. I have watched with amazement how our county have wasted thousands if not millions of dollars studying this issue, while all the time they could have spent this money taking steps to alleviate this problem. When I was young, I spent a lot of time coming in and out the mouth of the river and was aware of the depth at the mouth. Over the years, due to high tides, the mouth has gradually silted up and now is almost impassible in a boat that draws more than 3 feet. One must have an exceptional high tide to even do that. During flood periods, which is in Nov. and Dec. mostly, we also have very high tides, which holds the outflow up and increases flooding. Due to reduced flow, silt drops out and adds to the reduced depth at the mouth. What this river needs is to dredge the mouth area to help relieve this bottleneck effect. In the long run, occasional dredging will not be as expensive as the extensive dike work you propose, which will put certain rural areas in more danger, but supposedly save the towns along the river. Quite frankly, I believe the general populace is more important than our small towns. By dredging the mouth, a larger area of floodplain will be less likely to flood. I've heard all the excuses for not dredging, and none of them are valid. (in my opinion) One wold think that the Federal government would be wise enough to understand this, but we will see. There are a lot of stupid people in this world. Thanks
Fred Wright

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I am very concerned about the transfer of risk from current flood zones to current non-flood zones.

I purchased my house in the City of Sedro-Woolley after a careful review of the existing and recently proposed flood maps. I am not in the 100 year (1% risk) zone, nor has my house ever been in a flood risk zone.

It is fundamentally unjust to transfer risk to me and force me into the federal flood insurance program to allow other risky, recent, high value developments to escape risk and insurance costs.

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Post project modeling must be presented for review before we can provide meaningful project comments.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: ERON BERG Affiliation (Optional): _____

Address: 423 Talcott St.

City: Sedro-Woolley State: WA Zip: 98284

Email: mail@eronberg.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

98124375555

July 3, 2014

RE: Comment on Skagit River Flood Risk General Investigation Study

TO WHOM IT MAY CONCERN,

My great-grandfather took a paddle-wheeler from Mount Vernon to his new property at the mouth of Nookachamps Creek around the turn of the last century. My family has lived in the Clear Lake area since that time and my grandchildren represent generation number six. I am writing today to make comment of the Flood Risk Management GIS released on June 6th and specifically the impact on my property.

I bought the "family farm" in 1978. Since that time I have been involved in a number of major flood events including 1990 and '95. I have raised my house twice in an effort to be proactive without any compensation. I've had Coast Guard helicopters hover over my house and I have motored out my driveway in a boat with my wife and kids. I have planned carefully and have never filed an insurance claim or a claim with FEMA. I chose not to be part of an earlier class-action suit re: transference of risk which was won by the residents of my area.

The results of the Skagit River GI Study (which took too long and cost too much) came as no surprise. There's an old saying, "Money talks and bullshit walks" and it is obvious to anyone that there are hundreds of millions of dollars in retail, real estate and residential n one side of the river and a economically disadvantaged area with some farmland on the other. I understand that Army Corps is interested in economic impact and helping the most people. I also know that no plan is perfect. However, it is obvious that the big win is for Burlington and Dike District #12, while others of us, (SW, Clear Lake, Sterling, Nookachamps, upriver communities) pay the price.

Let me be specific about my concerns:

- There is a clear "transference of risk". Skagit County has promised to try and minimize these risks but that is hardly reassuring. When I'm told we need to "mitigate" I'm uncertain what that means? Will I be compensated for this risk? Who will pay to raise my house (again)? I have to laugh when I read that we all need to, "Share the risk" when it is obvious everyone is not sharing.
- For me there have been questions about transparency and honesty between stake-holders. There have been instances where I suspected collusion in the process. I remain in awe that Dike Dist. #12 seems to be able to do as they wish. They, along with the City of Burlington, and to some extent Skagit County have not acted in good faith nor been truthful about their intent. I feel, "sold down the river". Ultimately, my home and property are expendable while others prosper from the plan.
- I question the data being used. I'm uncertain that the Corps modeling provides realistic projections. When a former county official says in a meeting that results of the proposed study "Won't put one more inch of water on you" we all know that is a lie.
- My property is already deemed to be in a "critical use area" with regard to wetlands. This plan further reduces the value of my property and makes any improvements more restrictive.

- There are still a multitude of unanswered questions. One example is the sandbagging that might occur along the Sterling/Hwy 20 levee in a flood event. It seems very difficult to get a straight answer (see item #2) and "We'll figure it out as we go" isn't satisfactory. One estimate showed up to 1.5 feet more of water in a hundred year event. In my case this isn't a, "slight overflow increase" but the difference between having water in my home and not.

In summary I would say that I am pleased to see some forward movement on flood management. This is long overdue and every year we delay represents the potential for catastrophe. However, before the GIS is approved I hope that the decision-makers will consider the impact on everyone and provide appropriate protection and/or compensation to those who will lose.

I would be very happy to discuss this further. My contact information is provided below.

Robert Dow

21685 Francis Lane

Mount Vernon, WA. 98273

#360-770-1904 (c)

wetdawg2@hotmail.com

Skagit County Dike District 17

P.O. Box 2926
Mount Vernon Washington
98273

07/8/2014

To: United States Army Corps of Engineers
Seattle District Office
Skagit County General Investigation Team

Dike District 17 is writing official comment on the United States Corps of Engineers Skagit River General Investigation Tentatively Selected Plan. The district begins on the right bank of the Skagit River at the BNSF Railroad Bridge, continues through the River Bend and ends at Lions Park in Mount Vernon. The District provides flood risk management to urbanized North Mount Vernon and the county farming community of River Bend. The District provides service to approximately $500,000,000 of urban and rural assets.

The district supports the Corps Tentatively Selected Alterative of a Comprehensive Urban Levee Improvement Plan. We believe this would be the most effective way to keep the majority of our county's major infrastructure secure from flood damages in the case of a large flood event. This plan allows the district to provide a higher level of protection to our urban community and keeps a majority of critical infrastructure functioning.

The district also supports the potential for increased storage in the Baker River system. The increase in the amount of storage and the timing of that storage has a benefit to the entire Skagit basin. In the 2003 and 2006 floods of record, the enhanced levels of storage in the Baker System relieved the Skagit delta community from potentially higher impacts. This storage reduced the risk to life and property and lessoned flood related damages. The district feels written management practices and physical changes to the amount of dam storage will help ensure positive outcomes critical to the flood risk management in Skagit County. Dike District 17 will continue to support such a macro impact approach to flood control.

The District request for the County and the Corps continue to review and refine certain measures within the preferred alterative. For Dike District 17, major concerns are the advantages and disadvantages of the River Bend urban cut off levee. Though the District sees the economic benefit of such a structure, there are concerned about the potential for a transfer of risk to the rural areas within the boundaries of Dike District 17. Along with the landowners in the rural portion of our district there is the multi-million dollar Anacortes Water Treatment Plant. We are concerned with the "stranding" of this critical infrastructure. Further dialog and research on this measure may be needed. The district would like to review the information on the cut off levee measure in order to understand the scope and mitigation (if any) within this measure. Though the District does have some concerns, it believes in the process and is confident in producing a quality end product.

Dike District 17 supports nonstructural measures that remove flood waters from the floodplain. The District realize with a proposed preferred alterative of urban levee improvements, there will be an addition

of flood waters onto the rural flood plain with flood events larger than the capabilities of current control structures. It is important for these flood waters to flow off of these lands quickly in order to minimize damages to these regions impacted. The implementation of new flood gates, pump stations and enhanced drainage systems could be possible measures implemented in order to improve interior drainage. Skagit Counties rural and farm community is a defining component of Skagit Counties' viability and excellent quality of life. Measures to lesson flood impacts to these areas are important to the implementation of a comprehensive flood plan.

The Commissioners of Dike District 17 formally requests for the Corps and the County to engage the District as the next phases as the study progresses. The Commissioners and staff would like to be actively involves in the engineering and design phases of this plan. We believe our input in these next phases will be helpful in the successful flood reduction project.

Dike District 17 is supporting the direction of the Tentatively Selected Alterative as submitted by the United States Army Corps of Engineers. Commissioners and staff eagerly anticipate the progress of this process for enhanced flood control in Skagit County.

Leonard Eliason
Chairman / Commissioner
District 17

Jeff Kaptein
Commissioner
Dike District 17

Dale Ragan
Commissioner
Dike District 17

Daryl A Hamburg
Director of Operations
Skagit County Dike District 17

CITY OF SEDRO-WOOLLEY
Sedro-Woolley Municipal Building
325 Metcalf Street
Sedro-Woolley, WA 98284
Phone (360) 855-9922
Fax (360) 855-9923

Mike Anderson
Mayor

July 10, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, WA 98124

RE: Skagit River GI Study DEIS Comments

Dear Ms. Hadley:

Attached is Resolution 902-14 adopted by the Sedro-Woolley City Council on July 9, 2014 commenting on the Skagit River GI Study. Please accept those comments on behalf of the City of Sedro-Woolley.

Additionally, I would like to offer the following comments for your consideration, also on behalf of the City of Sedro-Woolley:

1. The Feasibility Report and DEIS includes mention of protection of the Sedro-Woolley Waste Water Treatment Plant. I understand that the method under consideration is a ring dike around the WWTP. A ring dike will not be adequate to protect the WWTP if there is standing water in the city. With water washing over our streets, the WWTP collection system will be overwhelmed and flood water will pressurize our collection system causing flooding into the WWTP from our internal piping. Additional measures will be necessary to protect the WWTP.
2. As our community learned after the collapse of the Skagit River I-5 Bridge, we are very concerned about accessibility, including emergency responders. Your TSP appears to jeopardize SR 20 west of Sedro-Woolley and SR 9 south of Sedro-Woolley. Any project should maintain thoroughfares for safety and emergency response.
3. Prior to selecting a final plan and as part of any final EIS, post-project modeling to show the extent of the transfer of risk is needed. In additional to modeling the Skagit River, Brickyard Creek should also be modeled to understand the effect higher water in the Skagit will have on the drainage and possible flooding from Brickyard Creek.
4. To state it bluntly, Sedro-Woolley has been very supportive of the GI Study, but always in the context of a river system-wide solution to flood risk. This TSP leaves Sedro-Woolley out when it comes to reducing flood risk and appears to increase flood risk to our community. We do not support a plan to increase the risk of flooding in the City of Sedro-Woolley. Indeed, the no action alternative appears be better for Sedro-Woolley than the $280,000,000 CULI plan. We need a plan that takes water out of the river system rather than moving water from high assessed value businesses to lower assessed value residents.

I appreciate the opportunity to comment on behalf of the City of Sedro-Woolley; I sincerely hope that these comments, as well as the comments made in Resolution 902-14 are taken seriously and incorporated into the final EIS and a redesigned project. This TSP, as presented, is not something we can support and if the USACE and Skagit County insist on selecting the CULI, as presented in the feasibility report, our community will have no choice but to actively fight this project.

Sincerely,

CITY OF SEDRO-WOOLLEY

Mike Anderson, Mayor

RESOLUTION NO. 902-14

A RESOLUTION OF THE CITY OF SEDRO-WOOLLEY, WASHINGTON COMMENTING ON THE DRAFT FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT FOR THE SKAGIT RIVER FLOOD RISK MANAGEMENT GENERAL INVESTIGATION

Whereas, the City of Sedro-Woolley was an active partner in the Corps of Engineers General Investigation of flooding on the Skagit River until recently when the City was no longer included in meetings and discussions about flood reduction alternatives including the process for identifying the Tentatively Selected Plan (TSP), and

Whereas, the original intent of the Skagit River GI Study was to include a comprehensive, system-wide approach to flood risk mitigation which included the City of Sedro-Woolley and was the reason the City of Sedro-Woolley was so engaged in this process and helped fund the local match, and

Whereas, the Draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation that was issued by the U.S. Army Corps Engineers (USACE) and Skagit County in May of this year does not include information that is adequate to allow the City of Sedro-Woolley to understand the consequences of the TSP, and

Whereas, the Draft Environmental Impact Statement (DEIS) does not include a careful analysis of the post-project conditions, and

Whereas, prior studies and analysis has demonstrated that raising the dikes downriver from Sedro-Woolley raises the flood levels within and around the City of Sedro-Woolley to include critical infrastructure, human lives, and real property, and

Whereas, it is not possible for the community in general and the City of Sedro-Woolley in particular to provide meaningful comments on the TSP without the post-project conditions clearly studied, and

Whereas, the City Council of the City of Sedro-Woolley supported the GI Study in an effort to find a Skagit River system wide flood reduction solution rather than a transfer of risk plan from a higher assessed value community to a lower assessed value community,

Now, therefore, be it resolved by the City Council of the City of Sedro-Woolley:

Section 1. The DEIS is inadequate to allow the City and the community to understand the TSP as it fails to provide post-project modeling which is necessary to fully describe the impacts to the people and infrastructure of the City of Sedro-Woolley including

impacts to the environment, economic losses, lives, property, on-going future risk and reductions to quality of life and impact on low-income households who may be at risk of losing their homes as a result of consequential changes to the base flood elevation from the TSP that may trigger mandatory participation in the federal flood insurance program and other intended and unintended consequences.

Section 2. The City Council of the City of Sedro-Woolley has grave concerns about the possible transfer of flood risk from historical and traditional flood prone areas which have been heavily developed in recent decades to areas that developed over a century ago and which have never been at significant risk of flooding as may be possible if the TSP is constructed.

Section 3. The City Council of the City of Sedro-Woolley requests Skagit County and the USACE to fully study the impacts of the TSP on the City of Sedro-Woolley and include the results within the scope of the final environmental impact statement and to further include as part of the finally selected plan all necessary measures to ameliorate the harm to the people, property and infrastructure of Sedro-Woolley that result from the finally selected plan.

Section 4. The City Council requests personal follow-up from Skagit County and USACE regarding these critical issues.

PASSED by majority vote of the members of the Sedro-Woolley City Council this 9th day of July, 2014, and signed in authentication of its passage this 10th day of July, 2014.

Mike Anderson, Mayor

Attest:

Patsy K. Nelson

Patsy Nelson, Finance Director

Approved as to form:

Eron Berg, City Attorney

From:	Mike Blade
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River Flood Risk Management General Investigation study
Date:	Monday, July 14, 2014 2:01:57 PM

To Whom it May Concern,

Blade Chevrolet, Inc is a locally owned automobile and recreational vehicle dealership located in the 100 year flood plain in Mount Vernon, Washington.

Blade employs over 70 full-time staff and generates approximately $60million in sales revenue for the local economy annually.

Blade Chevrolet is in favor of the plan put forth in the Draft Feasibility Report plan proposed by the Corps. It is imperative that the area which now is annually put at risk be made safer and it appears that the plan as proposed would do so in a cost-effective and environmentally responsible way.

Please feel free to contact me if I can be of assistance in any way.

Sincerely,

Mike Blade

President

Blade Chevrolet, Inc.

1100 Freeway Drive

Mount Vernon, WA 98273

www.SkagitRiverHistory.com
Comment Letter Re: Skagit River GI Study DEIS
Respectfully Submitted by Larry J. Kunzler, Sedro-Woolley, Washington, 98284

14 July 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS=EN-ER
P.O. Box 3755
Seattle, WA 98124

DELIVERED VIA E-MAIL: skagit.river@usace.army.mil; Hannah.F.Hadley@usace.army.mil; gail.m.terzi@usace.army.mil; NWS Commander Colonel John G. Buck; NWP Commander Colonel Jose L. Aguilar; Chief of Engineers Lt. General Thomas P. Bostick; FEMA Deputy Associate Administrator; Federal Insurance and Mitigation Administration Edward L. Connor

RE: Skagit River GI Study DEIS Comments

"If once you forfeit the confidence of your fellow citizens, you can never regain their respect and esteem." -- Abraham Lincoln

Dear Hannah,

*I attended my very first public meeting on 3/22/1978 (See **Partial Transcript of Corps Skagit Public Workshop**). In May of 1979 I was handed a copy of my very first DEIS by a neighbor. It was the Corps of Engineers DEIS re the Levee Improvement project ("LIP"). Little did I know how that document was about to change my life for the next 35 years. As a Vietnam Veteran I found it shocking that the US Army wanted to put floodwaters in my home and call it "consequential damages". Back then I worked very closely with Corps employees including hydrologists, project managers, environmental and enforcement personnel. We didn't have e-mail back then so everything was done by telephone or at public meetings of which there were many. I had a great deal of respect for the Corps, FEMA and USGS employees even though we were on opposite sides of the issue. However, today I find that respect almost non-existent as the bureaucracy has changed from one of trying to be honest dedicated public servants to public masters. Where seemingly government agencies do not work with the public, respect the public, listen to the public and seemingly talk to only other government employees. It appears that the left hand no longer knows what the right hand is doing. Case in point, see the e-mail below*:

From: Terzi, Gail M NWS [mailto:Gail.M.Terzi@usace.army.mil]
Sent: Monday, September 23, 2013 5:17 PM

Cc: FOSC Office; Thompson, Kate (ECY); Betsy Stevenson; Hanson, Jana
Subject: RE: [EXTERNAL] Nookachamps Wetland Bank excavations (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

. . .Thank you for your interest in the Nookachamps Wetland Mitigation Bank. The large amount of soils being removed from the bank is from stockpiled materials set aside during the bank construction. The bank sponsors have a deadline in which to remove the stockpiled soils, so I am pleased to hear this is underway. There is no requirement to monitor this activity unless the city or county has some specific requirement, but it would be up to them to do so.

. . .

One of the main goals of the bank was to provide flood attenuation and desynchronization, by planting a large and diverse floodplain forest, and creating wetlands and channels that have a positive gradient back to the river. The wetlands would hold water for longer periods, as would the channels and the forested floodplain would slow those flood waters down, so if anything the site is helping the Skagit issues with flooding rather than exacerbating the problem. The bank sponsor is actively monitoring all flood events and have a series of monitoring wells measuring ground water and we have concluded to date that the bank site is not negatively impacting adjacent properties by increasing flooding. Please let me know if you have any further questions. Sincerely, Gail…

Gail Terzi
Senior Scientist/Mitigation Program Manager Seattle District Corps of
Engineers, Regulatory Branch
(206) 764-6903
gail.m.terzi@usace.army.mil
(All ***Emphasis Added*** by SkagitRiverHistory.com)

Correct me if I am wrong but anytime you "slow flood waters down" i.e. decrease the velocity, you also back up the floodwaters and increase the deposition of sediment. Most importantly is that the "soil" that was taken from the left bank upstream of the BNSF railroad bridge was removed to the right bank of the Skagit River and given to Dike District 12 for "levee improvements" which as you well know from your current DEIS does "negatively impact adjacent properties by increasing flooding."

*As you know the 1979 Levee Improvement Project ("LIP") went down in flames (**See 1979 Levee Improvement Project Historical Index**). It appears that no one involved with the current DEIS took the time to review the Historical Index because you can clearly determine that induced flooding was one of the major issues that was responsible for the lopsided vote against the LIP. 71.4% of the voters said no to flood control. Burlington and Mt. Vernon voted against the project by over 65% in both communities. (See **11/7/79 SVH**)*

The very next day after the election I was contacted at home by then project manager Vernon Cook. Vern began his conversation by congratulating me on the vote (after negotiating a 5 million dollar house raising, construction of cattle mounds, a levee for Clear Lake and flood gates for Beaver Lake I was happy with the project however my neighbors encouraged defeat of the project because they lost their trust in the Corps of Engineers). He said that I'd beat him fairly and squarely. That everything I did was open

and above board. He then asked me a question which was "What are you going to replace the project with." Over the last 35 years I have tried to replace Vern's project by the use of floodplain management, (i.e. Limiting development in areas where no development should be taking place e.g. Gages Slough) only to have local government trash every regulation and NFIP guidelines and promoting development on the bottom of the river to the tune of over 3 billion dollars' worth of infrastructure. I have served on numerous flood committees including but not limited to the Skagit County Flood Control Advisory Committee; the State Department Of Ecology Floodplain Management Advisory Committee: The Washington State Legislative Joint Select Committee On Flood Damage Reduction: and The Skagit County Flood Control District Advisory Committee. I have went to so many public meetings, often taking vacation days to attend that they must number well into the hundreds by now. I also operate the webpage www.SkagitRiverHistory.com dedicated to the documented history of the flooding issue in Skagit Valley containing literally thousands of documents (with thousands more yet to be reviewed) and historical newspaper articles all in the hopes of documenting the flood issue for use by governmental bureaucracies, newspaper and other media reporters, elected officials, and most importantly individual citizens who are directly impacted by this most important issue. I've done all this as a citizen volunteer and not receiving monetary benefit for my efforts. I don't regret my efforts however, after doing all this I have to wonder where I have failed? Skagit County, mostly the cities of Mt. Vernon and Burlington continued to develop commercial and residential developments in the floodplain; ***FEMA REGION 10 does not enforce any aspect of the NFIP;*** *dike districts continue to do work without the benefit of all the required permits; and now the Corps of Engineers Seattle District has published its most recent DEIS which is with the exception of the potential for additional storage behind the two Baker Dams, is almost identical to the 1979 LIP. The same project with the same impacts that the voters said no to by a 71.4% margin. What part of intentionally inducing flooding onto other people's property including in their homes does the Seattle District not understand?*

I was so hoping that this time around I could fulfill my promise to Vernon Cook and be able to endorse the Corps project. With the exception of additional storage behind Upper and most importantly Lower Baker Dam, there is absolutely nothing that I can endorse in this DEIS. In my personal opinion your DEIS is a tremendous disappointment, poorly written, poorly researched, containing little if any true environmental analysis, breaking the spirit and intent of 44 CFR 60.3(c)(10), and misleading the public by cherry picking the results contained in Appendix I when a thorough review shows that the public actually preferred nonstructural alternatives to urban levee improvements and many other comments were completely ignored by the project team, thus skewing the results of the TSP. See 2012 Comments to GI Study Prelim Alternatives

Unless or until the Seattle District can come up with a project that includes some relief for all Skagit County citizens and not make the flooding problem worse or just keep the flooding from being worse than it already is I feel that the TSP will suffer the same fate as the 1979 levee improvement project. Such a shame, such a terrible waste of time and money.

What follows are a few additional comments on the DEIS.

1.1 Study Purpose and Scope*

"The recommended plan must accomplish flood risk management within the Basin; must be technically viable and economically sound; and must be supported by the local jurisdictions and the non-Federal sponsor." (***EMPHASIS ADDED*** *by www.SkagitRiverHistory.com*)

COMMENT: *This cannot be accomplished until the people of Skagit County have had an opportunity to vote on the preferred alternative. This is why I and others are so very critical and disappointed with the only one public hearing on this document. In the 1979 Corps proposal the Corps went out of its way to communicate with the general public. The sooner the vote can be taken the more money that will be saved.*

1.4 Study Area*

"The Basin has a total drainage area of 3,115 square miles and extends about 110 miles in a north-south direction." (***EMPHASIS ADDED*** *by www.SkagitRiverHistory.com*)

Comment: *There appears to be several discrepancy's although small concerning the size of the drainage area involved. "The river originates in Canada then flows south and west through the North Cascade Range. With some 2,900 tributaries, it drains 3,130 square miles of watershed in 2,730 square miles in Washington and 400 in British Columbia." http://www.ecy.wa.gov/programs/wr/instream-flows/skagitbasin.html.*

"The Skagit River basin has a drainage area of 3,140 square miles (Figure 1). The northern end of the basin extends 28 miles into Canada, and covers 400 square miles." Source: Draft Skagit River Flood Damage Reduction Study Environmental Baseline Report Upper Basin. http://www.SkagitRiverHistory.com/DraftComprehensive Flood Hazard Management Plan.pdf

Please provide information on how many tributaries exist downstream of Gorge Dam and Lower Baker Dam and how much have they contributed to Skagit River flood flows in the past.

1.4.2 Lower Basin

The majority of the population and development in the basin is clustered around the Interstate 5 (I-5) corridor in the lower Basin, including the cities of Mount Vernon (population 32,139) and Burlington (population 8,704).

COMMENT: *This statement is misleading. The majority of Mt. Vernon's population does not live in the floodplain. The only reason they need a floodwall is because of the water being forced downstream by*

Dike District 12. A process the Seattle District evidently supports given the TSP's plan to raise DD12 levees. In the interest of public safety you should review all the documents located at **Dike District 12 Shoreline Substantial Permit** *which like Mt. Vernon has pretty much told the rest of Skagit County to go to hell and they are going to develop their levees to provide hundred year protection which if they do before you complete your project the cost-benefit ratio as described in the DEIS for the TSP will be completely worthless. How does anyone on your project team consider that local cooperation? It appears to me that for $14 million dollars, seven of which came from the taxpayers of Skagit County, all that has been accomplish is a subsidized engineering plan for the cities of Mt. Vernon, Burlington and the dike districts.*

1.6 Flood History in the Project Area

"The flood-prone area includes the cities of Burlington and Mount Vernon, with their high population densities and critical infrastructure, such as roads, hospitals, water treatment plants, and commercial and industrial development." (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *Again the statement leads the reader to the conclusion that all of Mt. Vernon's "high density population" is in the floodplain when in truth and in fact by far the majority of high density population is out of the floodplain.*

The four largest documented floods on the Skagit River occurred in 1897, 1909, 1917, and 1921, before the construction of any dams in the basin.

COMMENT: *These four floods are anything but "documented". At best they are guesstimates. Please review* ***James E. Stewart Skagit River Flood Reports And Assorted Documents: A Citizen Critical Review Whitepaper, Updated and Republished 7/23/2006***[1]*. Even in USGS's own words Stewarts work product would be unacceptable today. (See* ***Review & Comments***[2] ***of "Draft Evaluation of Flood Peaks Estimated by USGS" by Robert D. Jarrett, Ph.D., USGS, National Research Program*** *2/14/2005)*

[1] Two years worth of additional research culminated in this now 90 page document. All of the "new" information gathered further supported the conclusions reached when the paper was originally published in 2004. Reasons the Stewart data should be rejected include but are not limited to: Doesn't conform to local history; Report is in conflict with Stewart's handwritten notes and field notebook; WSP 612 (1929) and WSP 1527 (1961) both use Stewart's 1918 and 1923 data. (You can't get to the 1923 figures by using 1918 data.); Reports (1923 and 1961) were never completed; Stewart paid directly by Skagit County not USGS (Skagit owns his work product); No measurements taken between Baker River and The Dalles; Stewart's work product rejected by Corps of Engineers in 1924 and 1951; Determination of "N-factor" at Sedro-Woolley inappropriate for The Dalles something Mr. Stewart himself was concerned about.

[2] : "Stewart's study of historical floods in the Skagit River basin had, by today's standards short-comings, simplifications, incomplete documentation, no known photographic documentation, and took decades to review and complete the evaluation of flood hydrology for the Skagit River near Concrete.". . ., "I believe much of the uncertainty in the historical flood estimates that can be evaluated now resides in factors that likely may remain

In 2003, there were again two floods in one month, this time in October. The Skagit River at Mount Vernon was above the zero-damage stage for 64 hours and above the major-damage stage for 47 hours. Due to reservoir regulation and sandbagging efforts, levees at Mount Vernon and Fir Island were able to withstand the flood without failing. Based on the flood peaks at Concrete, the 1990, 1995, and 2003 floods had annual chances of exceedance (ACEs) of approximately 10%, 4%, and 4%, respectively. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *These statements are misleading. The Skagit River at Concrete reached flood stage 5 times in 3 weeks. Only at Mt. Vernon did the Skagit reach flood stage only twice.*

DATE	C.F.S. CONCRETE	RIVER LEVEL	C.F.S. S-W	C.F.S. M.V.	RIVER LEVEL M.V.[3]
11/08/95	143,000	39.45	N/A	89,900	31.62[4]
11/11/95	72,900	29.67	N/A	59,200	26.60
11/14/95	67,700	28.86	N/A	57,100	26.18
11/25/95	63,200	28.11	N/A	61,500	27.03
11/29/95	160,000	41.57	N/A	133,000[5] 141,000[6]	37.32

2.2 Purpose and Need for Action*

The purpose of the Federal action is to reduce flood risks, life safety threats, and damages in the Skagit River Basin as a result of flooding. The action is needed because the Skagit River Basin experiences frequent flooding resulting in damages to both rural and urban areas throughout the Basin.

COMMENT: *A lot of the damages are due to the mismanagement of the floods by federal, state & local government agencies, like the Corps of Engineers, Burlington, Seattle City Light and Dike Districts 12 & 17. What follows is part of an editorial I authored in 2006 titled* **The Realities of Flood Control in Skagit County**.

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unknown (unless someone can find newspaper records, diaries, or other historical documents) and need to be evaluated.

[3] Authors Note: Flood stage is at 28.0 feet.

[4] Info obtained from USGS

[5] First reported by the COE.

[6] Currently being reported by USGS (10/27/02)

DAM STORAGE

Locally referred to as the "no brainer" aspect of flood control it has long been recognized that the impacts of the dams are the greatest "asset" or "liability" depending on your point of view. (See ***Historical Dam Building And Their Impacts On Floods - PDF*** *(**1924-1969**) If operated properly, the dams have the capability of storing enough flood waters to allow the crest of the Cascade and Sauk Rivers (the only totally uncontrolled rivers in the County but produce 60% of the flows during floods) to pass Concrete before waters behind the dams are released. This produces a prolonged flood event but greatly reduces the severity of the flood as was shown in 2003 when the dams were operated properly. Without the storage provided in 2003 the Skagit River, according to the Corps of Engineers, would have experienced a flow of 209,000 cfs[7] at The Dalles downstream of Concrete. The Federal Governments' unwillingness to operate the dams in a proper manner is disconcerting at best and unfathomable at worst. The severity of the flood event and the damages incurred is directly attributable to the operation of the dams. God didn't build the dams or operate them. Thus the severity of the floods is an act of man not God.*

LEVEES

In the lower valley, the severity of the flood event is directly attributable to the levee system, primarily Dike District 12 ("DD12") around Burlington. The impacts of those levees have the effect of raising the natural flow of flood waters in the 1990 and 1995 flood events .5 feet at the Sedro-Woolley sewage treatment plant to 2-3 feet in the Clear Lake-Sterling communities, to 4 feet in the lower Nookachamp valley. Because of the placement of the levees on the edge of the river (something the Dike Districts and Skagit County have been told since 1897 they needed to set back … (See ***1897 Capt. Harry Taylor Annual Report , and 1911 Clapp Report****) the impacts of DD12's levees also sends an unnatural amount of water downstream towards Mount Vernon. Before the construction of DD12's levees the majority of the flood waters flowed south of Burlington city limits from Gages Slough south to the river and out over the floodplain towards Padilla Bay, (the old mouth of the river). After the 1917 flood event the editor of the Burlington Journal stated, ". . . Burlington is so fortunately situated that it does not require a system of dikes to protect it from floods . . .", however this attitude changed after the 1921 flood (the most serious flood event in the 20th century (**See** **12/22/21 CT**, **12/31/21 C.H.**) put floodwaters in downtown Burlington. The point being is that all the water that used to flow from Gages Slough south to the river is now being either stored upstream or forced downstream. God didn't build the levees on the edge of the river, man did. God never intended for there to be 12 feet of water between the levees. Man did that. Thus, once again, the severity of the flood is directly attributable to the acts of man, not God.*

LAND USE PLANNING

[7] Which would mean that according to your DEIS the 2003 flood would have almost equaled the flood of 1917. See **Historic Flood Flows of the Skagit River**.

*Arguably the cities of Mt. Vernon and Burlington have the worst land use planning in the State of Washington with respect to development in floodplains. Since 1962 the amount of damages that would be incurred during a major flood event has went from an estimated $6,000,000 (**Source: 8/23/62 B.J.**) to now over $3,000,000,000 of development and infrastructure is at risk (**Source: Corps of Engineers 1/22/2003**). Which now begs the question, should multi-million dollar flood control projects be used as the reward for bad local land use planning? Should local governments be rewarded by the taxpayers of our country, state or for that matter even the county for trashing the SEPA, SMA, GMA, or local regulations mandated by the NFIP? Should the taxpayers foot the bill for governments on all levels not enforcing regulations? Even FEMA, perhaps the most maligned federal agency in our country's history has admitted that it bears some of the responsibility for the mismanagement of the Skagit River floodplain, "Certainly FEMA bears some responsibility for the increased flood damage potential in the Skagit Valley. . . . we are dealing with several generations of bad land-use decisions, coupled with a muddled and complex political environment." (**Source: FEMA e-mail dated 10/15/2001**) Which begs the question, "If government created the situation shouldn't government work together to fix it? God didn't build $3,000,000,000 worth of development and infrastructure on the bottom of a river, man did. God didn't promulgate regulations and then refuse to enforce them, government did. Thus, once again, the severity of the flooding events in Skagit County are not an Act of God but and act of man. Those responsible should be held accountable for their actions. (*See ***The Realities of Flood Control in Skagit County.htm***)

Objective: Reduce flood damages in the Skagit River Basin over the 50 year project life from 2020 to 2070.

COMMENT: *Is this an admission by the Corps that the project would not be completed for 6 more years*?

3.1 Existing Condition in the Study Area

3.1.1 Existing Flood Condition

. . . The four largest documented floods on the Skagit River occurred before stream gages were installed on the river. Based on the peak discharges at Concrete, the largest occurred in November 1897 and had a peak discharge of 265,000 cfs. The others, all with peak discharges greater than 210,000 cfs, occurred in 1909, 1917, and 1921. Between 1920 and late 1950, Ross Dam on the upper Skagit River provided only incidental flood regulation and the largest flood during this time had a peak discharge at Concrete of 154,000 cfs. Since 1953 Ross Dam has provided 120,000 acre-feet (ac-ft) of flood control storage. In 1977, Upper Baker Dam began providing 74,000 ac-ft of flood control storage. The largest flood discharges at Concrete since 1953 were a 160,000 cfs peak in 1995 and a 166,000 cfs peak in 2003. Peak discharges for selected floods, including the currently published peak discharges for the four historical floods, are listed in Appendix B (Hydraulics and Hydrology). The current natural and regulated peak flood

discharges that could occur at Concrete in floods of various ACE are listed in Table 3-1. Life loss associated with historic flood events includes one death in the 1917 flood, two deaths in a 1935 flood and one death in 1995. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

Table 3-1. Current natural and regulated peak flood discharges at Concrete, in cubic feet per second.

ACE	50%	20%	10%	4%	2%	1.3%	1%	0.4%	0.2%
Natural*	77,300	120,500	153,300	201,200	229,300	255,500	272,400	325,400	363,600
Regulated**	77,300	101,100	127,700	165,300	189,100	211,400	225,400	279,700	324,400

* Natural discharges are those that would occur without any regulation via dams/reservoirs.
** Regulated discharges are regulated at Ross and Upper Baker dams according to current Water Control Manuals.

COMMENT: *There was a gage that was used by Stewart to determine the 1921 flood although it was upstream of the current gage. All other estimates of the 4 historical floods were taken over 2 river miles upstream of the current gage. (See* **nhc Re-Evaluation of the Magnitude of Historic Floods on the Skagit River Near Concrete Revised Final Report)** which states in part:

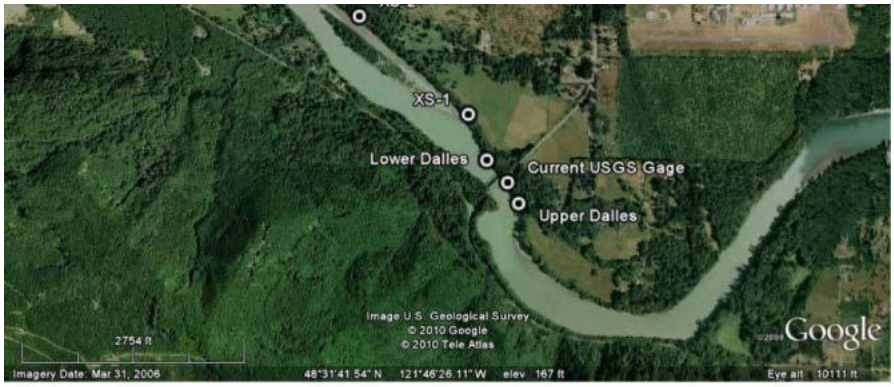


Figure 2. Location map of slope-area reach

This section examines information from Stewart's 1922/23 field book on high water marks between Concrete and The Dalles, with emphasis on estimation of the maximum water surface elevations in the 13 December 1921 flood. We surmise that Stewart installed two staff gages at The Dalles in December 1922 – referred to in Stewart's field book as the Upper Dalles Gage and the Lower Dalles Gage. The gage locations, as inferred from Stewart's notes, are shown on Figure 2. The Upper Dalles gage consisted of a vertical upper section and a lower elevation inclined gage. Stewart's notes (page 34/35) for 23 December 1922 refer to *"placing foot graduation marks on inclined gage"*.

. . .

The field book on page 22/23 under the heading "Levels at Concrete", and dated 28 November 1922, refers to measuring down from a point on a freight car to the rail below, noted as being 300 ft below the depot. From this point, the survey route has a total of 6 turning points to a *"1921 flood mark at Wolfs Residence"* at an elevation 184.55 ft MSL. According to research by the City of Burlington, Wolf owned several parcels of land in or near to the Crofoot Addition of Concrete. While we do not know exactly where Wolf's residence was, we assume that this flood mark provides a reasonable estimate of the 1921 high water elevation in the Crofoot Addition.

. . .

See also ***Preliminary Historical Investigation of East Concrete and Crofoot Addition Flood Levels*** *and* ***Why Crofoot Matters*****.**

COMMENT*: Is it true that according to the table 3.1 above it is the Corps position that if the 4 "historical floods" happened with the "estimated" intensity given to them by USGS that the 1897 flood would under todays conditions be a little less than a 100 year event; the 1909 flood less than a 100 year event; the 1917 flood an event closer to a 25 year event than a 50 year event; and the 1921 flood a 50 year event? If the answer to the question is yes please explain the figures that were published in the September 23, 1979 issue of the Skagit Valley Herald (***9/23/79 SVH***)* especially since 1979 the USGS lowered the "estimated" flows of the Skagit River.

Year	Currently published peak discharges	Gage height (ft) (current datum)	Revised peak discharges (ft^3/s)	Percent difference in revised
1815	500,000	69.3	510,000	2.0
1856	350,000	57.3	340,000	-2.9
	275,000	51.1	265,000	-3.6
1909	260,000	49.1	245,000	-5.8
1917	220,000	45.7	210,000	-4.5
1921	240,000	47.6	228,000	-5.0

(Source: **Re-evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington,** 8/10/2007, USGS)

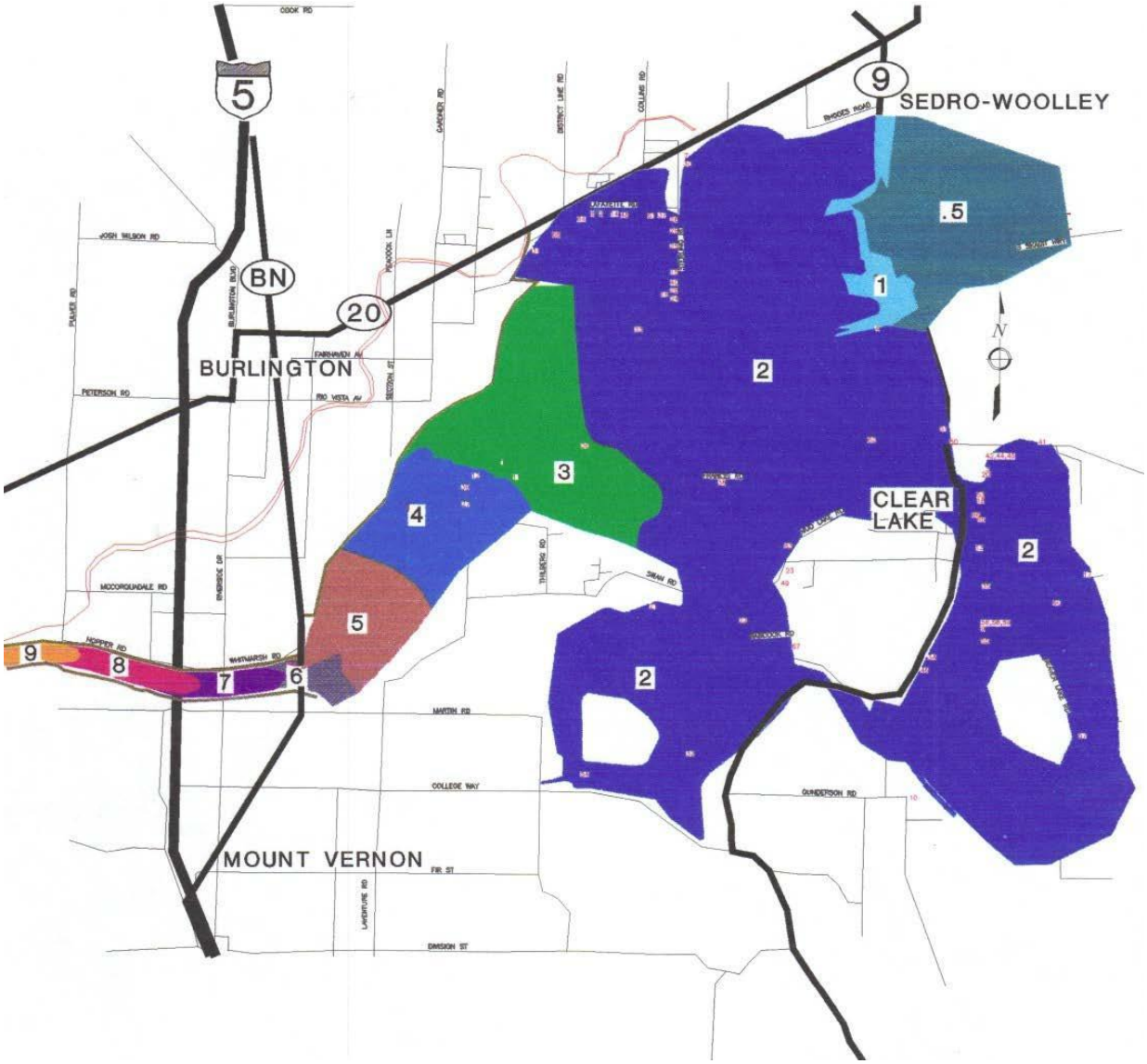
COMMENT: *Given the uncertainty of the "estimated" flood flows measured over two miles upstream of the Dalles wouldn't it be more appropriate to address the location of the flood flows as "The Dalles" or "Upstream of the Dalles" instead of Concrete?*

If a levee fails, flood depths could be up to 8 feet in some places for a 1% ACE flood with a 2-3 day duration.

COMMENT: *Historical newspaper articles indicate that "in some places" the flood waters stay around for several weeks after a major flood especially in the Samish Basin. See also testimony of* ***J.O. Rudene, Skagit County Property Owner Testimony for 11/26/1924 Hearing.***

. . .Between Sedro-Woolley and Mount Vernon, the Nookachamps Creek Basin is an un-leveed area along the left overbank of the Skagit River (RM 19-22) that floods frequently and provides substantial natural flood storage. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *There is very little about the Nookachamps Creek Basin floods that is "natural" (includes Sterling, Sedro-Woolley and Clear Lake) as the graphic below prepared by nhc depicts the impact the man-made levees had on the 1990 flood events. Clearly it shows that the area is being used as an* ***artificial storage basin****. I strongly suggest to the Corps that any reference to "natural storage" be removed from this document, all appendices to this document and all future documents prepared by the Corps. Truth be known that it is the Dike District 12 levees which change the natural course of the river, redirects the flood flows downstream until the opening at the BNSF railroad can no longer handle the flow just like the funnel shown in the below graphic and begins to back up the waters until the DD12 levees redirect the flood flows over highway 20 and into Gages Slough. There is nothing "natural" about that. The numbers on the graphic below show the additional feet of flood waters put into the Nookachamp basin by the DD12 levees during the 1990 flood event..*



Clearly the graphic shows that the floodwaters during a 100 year event have already been raised more than one foot by the existing development in violation of 44 CFR 60.3(c)(10).

During floods greater than 4% ACE, there is the potential for the Skagit River to overflow the right bank in the Sterling area (RM 21) and in Burlington near RM 18.

COMMENT: *Not much potential for overflow at RM 18 when DD12 continually puts up this landfill dike during multiple flood events which means it's no longer an emergency situation but part of their levee system. See photo below:*

At the BNSF Bridge (RM 17.5), levees and the natural topography restrict flood flows, forcing them to pass under the bridge. . . .Debris accumulations on the order of 6,000 square feet (sq ft) can cause the water surface to rise above the bridge's structural low chord and raise the upstream water surface as much as 3 feet during a 1% ACE flood. Water surface elevations at the BNSF Bridge influence flood depths upstream in the Nookachamps area and the amount of floodwater flowing onto the floodplain that occurs at Sterling. As water surface elevations rise at Sterling, more water flows out of the river there and flood discharges downstream are reduced. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *This entire section needs to be re-written in order to show how the scour factor was taken into account if in fact it was taken into account. The picture below is of the impact of scour on the BNSF bridge during the 1995 flood event.*

The DD12 levees changed the natural course of the Skagit River during flood flows thus redirecting the debris and are thus responsible for any backing up of the water into the Nookachamps and across Highway 20. The bridge is not the problem; the levees that were moved in some places 4,000 feet closer to the edge of the river in 1956 are the problem which makes the TSP such a ludicrous solution that is only going to exacerbate the problems of upstream property owners from Sedro-Woolley downstream and into the Samish River Basin.. The TSP is currently the definition of insanity, doing the same thing over and over and expecting a different result.

3.1.2 Existing Flood Risk Management in the Skagit River Basin

. . . Skagit County participates in the National Incident Management System (NIMS) when faced with hazards and incidents including floods. The County has a NIMS Standing Unified Command, consisting of the Emergency Management Director, the Sheriff, the Public Works Director, and the Public Health Director. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *It should be noted in this section that it is the positions identified who have the authority to order evacuations.*

3.1.3 Existing Economic Overview

Skagit County: Skagit County has 116,901 residents, 50% of whom live in unincorporated Skagit County; covers 1,735 square miles; and contains 8 incorporated jurisdictions and numerous communities (U.S. Census Bureau, 2011). The majority of the urban population is in the cities of Mount Vernon, Burlington, Sedro-Woolley, and Anacortes. From 2000 to 2010, the County's population increased by 13.5%. The population at risk from flooding in the study area is 37,000.

COMMENT: *So according to the above section approximately 32% of the people living in Skagit County are at risk of flooding. How many individuals who live in Mt. Vernon are at risk?*

3.2.3.2 Future Without-Project Economic Flood Damages

New development within the floodplain is expected to comply with land use regulation pursuant to the Federal Disaster Protection Act of 1973 (Public Law 93-234) and Skagit County Code Section 14.34, and be flood proofed with the lowest floor elevated above the 1% ACE flood level.

COMMENT: *Burlington is subject to 44 CFR 60.3(c)(10) and SCC 15.20.205. To my knowledge these regulations have all but fallen through the cracks by all jurisdictions in Skagit County, and with the following exception never enforced by FEMA. This would be a good section to address the cumulative impact of all the existing and anticipated development including I-5 and the levees you propose increasing the height of as well as the fill in Gages Slough you plan on putting in as well as why can you put fill in Gages Slough but BNSF Railroad cannot.*

> *The Burlington Northern has violated the flood plain permit requirement and the encroachment standard of Section 60.3(c)(10). This is a very serious violation, in view of the extensive hearings and other meetings over a 4-year period that went into the negotiated agreement Skagit Valley communities in lieu of a conventional floodway designation. The encroachment remains a violation until either the fill is removed from the Slough, or a scientific, technical engineering analysis is provided demonstrating that the cumulative effect of the proposed fills, combined with all existing and anticipated development, will not increase water surface elevations of the base flood more than one foot. Such an analysis would, of course, have to apply to the entire reach of the Skagit River in the Delta, as explained at our recent negotiation session with the County and the Railroad. See* ***FEMA letter re BNRR fill in Gages Slough dated 2/20/1987.***

This begs the question is this yet another example of regulations only applying to private enterprise and not the government. In the words of one former Corps project manager one existing development, I-5 has already raised the flood waters more than one foot especially in South Burlington and North Mt. Vernon. I might also add that the operative verbiage in Section 44 CFR 60.3(c)(10) that you cannot raise floodwaters more than one foot "at any point in the community". Isn't that exactly what your current TSP does or at least has the potential of doing. Putting fill in Gages Slough or anything in Gages Slough will certainly raise the 100 year flood in that location let alone upstream property owners. Gages Slough is the old channel of the Skagit River. Not a sub-channel or a tributary channel but the channel of the Skagit that you can track all the way to Lyman. Part of that channel is Minkler Lake east of Sedro Woolley. A channel change in that location would be devastating to Sedro-Woolley. I'm surprised that I didn't find any mention of it in your DEIS.

3.3.2 Measures Carried Forward and Eliminated From Further Consideration
Table 3-6 lists measures eliminated (screened out) from further consideration

Operational modifications to Ross Dam

Modification of operations would likely require reopening of Seattle City Light's FERC license and treaty negotiations with Canada. International treaty negotiations are likely to be outside the scope of this study, therefore this measure was eliminated from further consideration. (***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *This decision was made despite the fact that the Corps when determining the amount of storage needed behind Ross Dam used the 1923 Stewart figures from Sedro-Woolley. Something that USGS has publically stated is unreliable and cannot be used. See 8/13/1953* ***Ltr to USACE Corps District Office in Portland fm USACE Seattle District Office re: Flood Control Requirement and Operating Procedure for Ross Reservoir, Skagit River, Wash.***

*7. The next step was to determine the amount of storage required at Ross Reservoir to provide the maximum crest reduction at Sedro Woolley. All discharges of more than 65,000 second-feet at either Sedro Woolley (**1908 through 1923**) and Concrete (**1924 to date**) **occurring in October, November, and December were studied.*** **See also:** ***Retyped for clarity and emphasis 8/13/1953 Corps document.***[1]

COMMENT: *Simply put the amount of storage behind Ross Dam was determined using a Corps mistake that should be corrected immediately. If that requires reopening the FERC hearings then so be it. Seattle City Light has had a free ride at the expense of the people of Skagit County long enough. Why did they use the SW figures? Because using the Concrete figures would have required more storage.*

Overtopping Levees

High residual damages of areas situated behind the levee, requires purchase of substantial acreage for flowage easements, overtopping floodwaters may be a source of pesticides or other contaminants decreasing the water quality of receiving water bodies. This measure does not address the objective of reducing life safety risk. This measure does not meet criteria of minimizing adverse impacts to environmental, agricultural, and/or cultural resources.
(***EMPHASIS ADDED*** by www.SkagitRiverHistory.com)

COMMENT: *So why wouldn't the same apply to further induced flooding into the Nookachamp and Samish Basins? Farmers are business people just like the irresponsible commercial developments in*

*Burlington that were misled re the risk of the flooding by local government officials. The BFE's were determined by FEMA in 1984 as if the levee system was not there thus lowering the BFE's across the floodplain while understating the risk to property owners upstream of the DD12 levee system. See **Skagit Surveyors & Engineers Benchmark Certifications for Halverson** for flood levels experienced by upstream property owners during the 1995 flood event due to in large part to DD12's levee system.*

Table 3-7. Summary of Management Measures Carried Forward to Formulation of Alternatives

Examples of non-structural measures that **may be** evaluated during alternatives formulation include: flood proofing, relocations, landscape features, and flood warning evacuation systems that could be implemented throughout the basin as needed. ***(EMPHASIS ADDED** by www.SkagitRiverHistory.com*)

COMMENT: *Property owners within the Samish and Nookachamp Basin have been repeatedly told by numerous Corps project managers and the Skagit County Public Works Department that those who will be hurt by any project will be the first to be helped. For the Corps to now state that non-structural measures that "**may be"** evaluated leaves a strong taste of distrust by upstream property owners. Either the Corps and County are committed to helping impacted induced flooding property owners or they are not. Which is it?*

3.7.2 Urban Areas and Critical Infrastructure Protection Preliminary Alternative

… This alternative was not brought forward because it would not provide flood risk reduction for rural areas and has high residual life safety risk for residents within the urban ring levees.

COMMENT: *Is not a ring levee what you are proposing east of I-5 for Burlington and because I-5 will not let water over it until it gets to Gages Slough isn't the above life safety risk exactly what you will be achieving?*

3.8.2.3 CULI Feature Descriptions

The following elements would be required as part of the Burlington Hill Cross Levee:

Gages Slough Culvert: A culvert structure would need to be constructed to accommodate daily flows into and out of Gages Slough but to restrict floodwaters from flowing into the Burlington area. ***(EMPHASIS ADDED** by www.SkagitRiverHistory.com*)

COMMENT: *See response at **3.2.3.2** above concerning Gages Slough. You cannot restrict floodwaters from flowing in Gages Slough.*

*At this point I am running out of time to continue the above format for comments. 45 days for comments for people who actually have real jobs and work for a living cannot be expected to review all the documentation you have submitted to establish your TSP in your DEIS and its 9 appendices. Suffice it to say that my concerns with the TSP as presented in your DEIS are pretty much the same concerns that I expressed with the City of Burlington & DD12 DEIS. (See comments **here**) Burlington, DD12, the Skagit County Planning Department have for years chosen to ignore the comments much the same as I expect the Corps to ignore them. They include such things as FEMA DC Headquarters designated the levees as part of the floodway therefore you cannot put fill material on them. Gages Slough is a "Special Flood Risk Area" which prohibits fill. (**See** response at **3.2.3.2** above concerning Gages Slough. **See also** excerpts from Burlington comment letter below.)*

Gages Slough is the old channel of the Skagit River. Not a sub-channel or a tributary channel but the channel of the Skagit that you can track all the way to Lyman. Part of that channel is Minkler Lake east of Sedro Woolley. A channel change in that location would be devastating to Sedro-Woolley. I'm surprised that I didn't find any mention of it in your DEIS but then it doesn't seem like you care very much about the residents of Sedro-Woolley.

Excerpts from Comment Letter on Burlington/DD12 DEIS

At that time (July 3, 1984), conventional floodways were determined not to be appropriate for the Skagit River delta area for a number of reasons (See Appendix D, Exhibit 6, page 18.) In lieu of a floodway, pursuant to additional study, FEMA accepted a "most probable failure point" analysis, which had the flood overtopping the railroad tracks at Sterling. In Burlington, FEMA helped with a compromise which was to designate Gages Slough a "Special Flood Risk Area." This area does not have all the qualities of a floodway, but the designation is quite restrictive with flow-through house designs and other elements. Now, a regulatory floodway is being proposed for "later adoption" by FEMA, following changes to the Base Flood Elevations, and it is critical to Burlington that the adopted program of protecting overbank flow paths through farmland preservation be retained as a floodway-like option. (Pages 9 & 10)

COMMENT #6: The comments above are nothing short of incomplete and downright misleading. The FEIS should include a much more thorough analysis based on the documentation below. The base flood elevation analysis consisted of the following: (NOTE: All documents are available for public viewing at www.SkagitRiverHistory.com under FEMA.)

Skagit County, WA

As a result of meetings held in Region 10 during the week of March 15, 1982 it was determined that a conventional floodway would not be established for the communities within the Skagit Delta area. These include Skagit County, the Cities of Burlington and Mt. Vernon, and possibly others. The FIRM for these communities should show floodways delineated to include only the main channel of the Skagit river and the levees. Thus, the floodway should be delineated at the inside toe (protected side) of the levees.

Source: 4/2/1982 FEMA MFR, http://www.SkagitRiverHistory.com/FEMA/1982-4-2%20MFR%20re%20D&M.pdf

Despite the fact that the Federal Emergency Management Agency (FEMA) has not designated a regulatory floodway, it is still recognized that there is a need for development to be regulated in order that flood hazards are not significantly increased. Section 60.3c of the Code of Federal Regulations is designated for areas where 100-year flood elevations have been established but no regulatory floodway identified. The City of Burlington and Skagit County will be required to adopt ordinances which comply with the requirements of Section 60.3c in order to maintain participation in the NFIP. Part of this requirement will be to ensure that no new construction, substantial improvements, or other development (including fill) is permitted within Zones A1-A30 on the Flood Insurance Rate Maps, unless it is demonstrated that the cumulative effect of proposed development, when combined with all other development, will not increase the water-surface elevations of the base flood more than 1.0 foot at any point within the community. While it is recognized that this determination will be difficult for reasons discussed in this letter, good faith efforts on the part of these communities will be expected by FEMA.

Source: 8/22/83 FEMA letter, http://www.SkagitRiverHistory.com/FEMA/1983-08-22%20Mrazik%20Letter%20to%20LJK.pdf

The basic standard FEMA must require of communities in situations where floodways are not yet established, is Section 60.3(c)(10) of the program regulations (copy enclosed):

(10) Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Source: 12/15/1983 FEMA letter to Burlington, http://www.SkagitRiverHistory.com/FEMA/1983-12-15%20Ltr%20to%20Burl.pdf

First, Mr. Kunzler states that the FIS fails to accurately identify flood-flow paths. Given available topographic information for the Skagit River Delta and the uncertainties of where levee overtopping and/or failure would occur, it is impossible for the Federal Emergency Management Agency (FEMA) to predict the precise path of a 100-year flood. We estimate that approximately 130,000 cubic feet per second (cfs) of the 240,000 cfs 100-year discharge could not be handled by the Skagit River channel, but would instead travel through overbank areas. As explained in our August 22, 1983, letter to Mr. Kunzler, we cannot divide that flow with any degree of certainty between Burlington proper (Gages Slough and overbank areas) and the agricultural area north of the city. The nature of the delta is such that flooding occurs in sheetflow patterns. Topographic variation will result in some split flow at Interstate 5, but the overbank flood plain itself will not diverge into 2 distinctly separate entities until the flow reaches Bay View Ridge.

Source: 2/1/1984 FEMA letter to Burlington, http://www.SkagitRiverHistory.com/FEMA/1984-02-01%20Mrazik%20to%20Henery.pdf

According to Mr. Moos, our assumption that the entire overland flow of 130,000 cubic feet per second (cfs) exits the Skagit River channel upstream of Burlington is unrealistic and inconsistent with historic flooding. FEMA recognizes that the proposed base (100-year) flood elevations (BFEs) resulting from this assumption may not duplicate recorded flood events. However, because it cannot be predicted with sufficient certainty where flow breakouts caused by levee breaches and failures will occur, our modeling distributes all flow which exceeds the estimated river channel capacity of 110,000 cfs to the overbank areas. Since the Skagit River levees are inadequate to contain the total 100-year discharge of 240,000 cfs, our hydraulic analysis was performed as though the levees did not exist, in conformance with our levee policy.

Source: 5/22/1984 FEMA letter to Burlington, http://www.SkagitRiverHistory.com/FEMA/1984-5-22%20Ltr%20to%20Burl.pdf

In addition to our discussion on the extra foot of freeboard, we also discussed the need for a setback from the levees in the interest of protecting the public health and safety. Two separate types of zones were discussed, first a zone where all new construction would be prohibited and, second, a zone where special building techniques and engineering certifications would be required. In our discussions, we concluded that a 100 foot setback would be desirable and realistic in view of the real hazard posed by levees that could break at any point. Likewise, because of the possibility of such breaks, an additional setback necessitating special building techniques between 100 and 500 feet from the levees was judged to be appropriate. These techniques would involve use of post, pier, pile, or column construction, with water able to flow under the foundations, and would need to be certified by a registered engineer as being able to sustain at least overtopping velocities. These two strips would also serve as additional conveyance areas to complement that which is described in the next paragraph.

Concerning conveyance areas, we agreed that the work Bob Boudinot is doing to designate secondary drainage channels, such as the Gages Slough, as areas for which building cannot occur, as well as designating areas adjacent to such channels as areas in which buildings must be elevated using post, pier, pile, or column techniques, would be desirable and would probably comply with the encroachment provision found at Section 60.3(c)(10) when combined with the additional strip available along the levees discussed in the previous paragraph. We agreed that construction in these areas would not need to be certified against velocities as they would for the strip adjacent to the river and levees.

Source: 11/1/1984 FEMA letter to Skagit County: http://www.SkagitRiverHistory.com/FEMA/1984-11-1%20Ltr%20to%20SC.pdf

Thus we can tell from a review of the above documents that FEMA performed their analysis as if the levees did not exist (thus giving the residents of Burlington a terrible false sense of security on how deep the water will be in case of a levee failure) and that the "informal floodway" in the lower valley was from the landward toe of the levees to the landward toe of the levee on the opposite side of the river. Also since a regulatory floodway was not established that Burlington was to conduct themselves under 44 CFR 60.3.(c)(10) meaning that "no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood more than one foot **at any point within the community**." The FEIS should extensively discuss and show with hydraulic analysis that the massive development east of Interstate 5 has not already raised the flood waters more than one foot at any point in the community, especially concentrating on the area east of the interstate. The FEIS should also speak with specificity to the issue of where it has or as the case may be why it has not ever enforced the verbiage of 44 CFR 60.3.(c)(10).

In lieu of all my disappointment and criticism of the current TSP DEIS you may find my next comment a little confusing. I actually want to thank the Seattle District Corps of Engineers, especially the many friends I made during the 1979 LIP. You had a profound impact on the next 3 ½ decades of my life. While the professionalism and public respect has dwindled during that time frame for government employees, your impact took a guy who had a dead-end job as a hired hand on a dairy farm and launched him on his way to being the chief investigator for one of the top 5 attorneys in the Country. So it is very fitting that the first DEIS I reviewed and the last DEIS I will review came from the Seattle District Corps of Engineers.

I've been told by three doctors over the last year that I have to get stress out of my life if I want to do a lot of fishing in my retirement. The work that I have done over the last 35 years on the flood issue has in truth and in fact been a labor of love. However now as I am preparing to retire at 68 (well maybe 70) I have a whole lot of fishing that I would like to do and spending weekends and vacation days sitting behind my computer or attending public meetings just doesn't belong in my retirement years.

So go forth young floodplain management people, try and make a difference, try and work with Mother Nature and not against Her. As I have said many times in my over 200 public presentations, "Mother Nature has left Her footprints in the sand. Walk in Her moccasins and She will tell you about your past, and in so doing She will show you your future." Knowledge is only knowledge if knowledge is shared. Let history be your teacher. Do not be dissuaded by liars, cheats, cads, scoundrels, all those people who stand to gain at others' expense. Stay true to your beliefs, let truth be your moral compass and dedication your motivation for in the end Mother Nature will have the final say.

Respectfully submitted,

Larry J. Kunzler, SkagitRiverHistory.com Publisher
floodway@comcast.net

From:	ktm520rider
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit river flood/Sedro Woolley
Date:	Monday, July 14, 2014 7:07:21 PM

Hello, I grew up in La Conner and remember the floods[1949]. There used to be tugboats running up and down the river and I think that helped keep it[the river] a little clear. Plus the W.T. Presten [sp] ran up and down keeping snags out. Now for the fun part, raising the dikes up is like moving the ceiling of your house up because the floor is dirty.

I don't think running a hamburger joint and keeping books for a parts house means much in the world of river management.

Kelvey L. Melom

ktm520rider@frontier.com

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement

June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

THERE Are a number of disturbing ideas in this plan. LET me make a note of just a few. THANK you. a.) It seems that priority has been placed on high value property & corporate locations over and above common private ownership. For example; our FARM has been designed with historical Flood levels in mind. To increase these levels would be devestating to the infrastructure. THIS IS something we can't Afford to adjust.

b.) To AVOID public $ municiple input seems coersive at least and alarming when looking at the bigger picture.

c.) In addition, there are many, many appropriate options For dealing with the flood issue and we all are affected in one way or another but we should NOT allow political lobby, corporate agenda or government corner pressure to come into play. I would hope someone would stand in the gap and advocate for a plan which is of benefit for all.

I appeal to you...

US Army Corps of Engineers · Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Serious consideration should focus on Flood gates & Flood Way From Riverbend at Avon to the Swinomish Channel.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Doug Wedin Affiliation (Optional): _____

Address: 10538 S. 3rd Street

City: Sedro-Woolley State: WA Zip: 98284

Email: djwedin@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. **Thank you!**

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

Swinomish Indian Tribal Community
A Federally Recognized Indian Tribe Organized Pursuant to 25 U.S.C. § 476
11404 Moorage Way
La Conner, WA 98257

Phone: 360/466-3163
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Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755 United States Army Corps of Engineer

RE: Skagit River Flood Risk Management General Investigation (GI) Draft Feasibility Report and Environmental Impact Statement

July 25,2014

Dear Ms. Hadley:

The Swinomish Indian Tribe would like to provide the following comments regarding the Skagit River Flood Risk Management General Investigation (GI) Draft Feasibility Report and Environmental Impact Statement. The Tribe has usual and accustomed fishing rights within as well as beyond the Skagit and Samish River Basins secured in the Treaty of Point Elliot of 1855. Therefore, any impacts associated with flood control measures that might adversely impact the Tribes' fisheries is of grave concern. The Tribe has been actively involved in the progress of Corps led flood reduction studies since 1993,and has provided comments to the Corps regarding flood control efforts for three decades preceding that (letter attached). It is therefore particularly distressing to review this document and find that only the most cursory analysis of the impact to fisheries resources and the Tribe's ability to sustain meaningful fisheries was considered. In fact, there was no quantitative fisheries analysis undertaken at all in the DEIS despite nearly 50 years of requests by the Tribe to the Corps to adequately assess the impacts of flood reduction efforts on its fisheries. We believe this DEIS is deficient with regard the requirements of the National Environmental Policy Act, and is a dereliction of the Corps Trust responsibility to protect Tribal resources. However, we want to state with absolute clarity that we are not opposed to the implementation of flood reduction measures, and we recognize the potential economic and life threatening impacts that can occur with the ever increasing frequency and magnitude of floods to come. However, the cost of the additional levels of flood protection cannot and should not be borne on the backs of our fisheries resources and the Swinomish Indian Tribal Community which depends on these resources for its very existence. In addition, it appears that if conservative climate change predictions are correct the expenditure of approximately $225 million for project construction plus approximately $800,000/year for

payments to Puget Sound Energy for additional flood storage will result, by 2070, to providing a level of flood protection that is far below that projected in this DEIS. This investigation is deficient in analyzing the impacts of this project on the environment, or providing for meaningful discussions of the type of mitigation necessary to offset these impacts. We believe that a more appropriate approach that should have been taken, particularly given the millions of dollars that have been spent on this analysis over a long period of time, would include a detailed and quantified environmental analysis with the details of specific mitigation measures to be taken provided and with incorporation of well accepted analyses of climate related changes in hydrology, storm surge, sediment movement, and sea level rise. Unfortunately, this GI was undertaken without the requisite analyses provided. We also believe that it would have been appropriate to include an alternative that would provide some measure of environmental benefits associated with the project.

Based on the limited information provided in the DIES as well as decades of on the ground experience managing fish and fish habitat within the Skagit and Samish River watersheds, we believe there will be significant environmental impacts associated with the Preferred Alternative. Adverse impacts to natural resources associated with the construction and maintenance of miles of new levees, the encouragement of additional development in the floodplain, additional offshore export of sediment, downstream displacement of juvenile anadromous fish, additional erosional forces on existing limited in-river habitat, changes in Baker Lake flood control operations, and emergency responses to levee failures that often result in long term adverse impacts to fish habitat are all likely outcomes of the proposed alternative. Bypass levee alternatives will result in the premature export of fish into marine environments that will result in higher mortalities that would occur were the fish able to remain within freshwater environments, and increased sediment loads to Padilla Bay, an area that provides an important crab fishery to the Tribe.

With that being said, we provide the following specific comments.

1.10 Planning Process and Report Organization 3. Determine Federal Interest. There has been no analysis of how the selection of the preferred alternative will effect Tribal fisheries, or an evaluation of how the Corps Trust responsibility for the protection of Tribal assets will be exercised.

2.5 Planning Constraints: No mention is made of whether the Corps or sponsors have any constraints with regard to impacts to Tribal fisheries resources. Within the Skagit River basin, impacts to ESA listed fisheries resources is limited to steelhead, chinook and bull trout. Tribal fisheries are equally dependent on the remaining non-listed anadromous species such as coho, pink, sockeye and chum salmon, It is unclear as to how the Corps intends to address potential impacts to these resources. We believe the Corps is constrained from damaging Federally secured fisheries resources.

3.1.2 Existing Economic Overview: The description of Tribal reservations and fishing rights is incorrect. The Samish Nation has neither a reservation nor usual and accustomed fishing rights in either the Samish or Skagit River basins. The Lummi Tribe has neither a reservation nor usual and accustomed fishing rights in the Skagit Basin. They do have usual and accustomed fishing rights in the Samish River basin.

3.2.1 Future Without Project Condition-Future Flooding Condition; This section is deficient in that it ignores a significant amount of information previously provided to the Corps regarding the likely impacts of global climate change resulting in an increase in the frequency and magnitude of floods, additional

sediment mobilization ,and elevated sea level rise. Please attach by reference the letter submitted to you from the Skagit Climate Science Consortium which more fully details the existing data associated with climate change downscaled to the Skagit River basin and the analytical deficiencies in this GI. The statement that since the Corps believes that the effects of climate change on hydrology and hydraulics is uncertain no analysis of future without project conditions was undertaken is not compelling and creates a misleading analysis of the costs and benefits of this project. In fact, climate change analysis indicates that what the Corps is predicting to be a 250 year event in 2080 is actually predicted to be a 55 year event. No such modelling was done by the Corps, and therefore all environmental and economic analysis that depend on a fixed flood return frequency will underestimate economic and environmental costs of this project.

This section also mischaracterizes the Baker FERC license as providing an option to purchase additional flood storage. The Baker License contains a place holder for future USACE study and action on additional flood storage not an option for purchase.

3.2.3.2 Future Without Project Economic Flood Damages; The GI indicates that population growth will be directed from 80% urban to 90% urban pursuant the Envision Skagit 2060 plan. We are unaware of any actions taken by the County or proposed by the County that will result in this redistribution of future population growth. If the estimate of economic damages is based on this erroneous assumption of population distribution, that analysis should be redone to adequate evaluate more realistic potential economic impacts.

3.2.4 Environmental Future Without Project Condition: This section does not adequately describe changes in riparianb vetetation or any characterization of the Baker River watershed.

3.3.2 Measures carried forward and eliminated from further consideration Table 3.7. Setback Levees. There has been inadequate justification for removal of this analysis from consideration. There was no quantitative analysis regarding this alternative with regard to impacts to fisheries resources or cultural resources. This alternative, or elements of this alternative combined with other flood reduction measures should have been proposed rather than the all or nothing proposal that was eliminated. This is the only alternative that would have, at a minimum, mitigated for additional flood control measures and which could result in an actual increase in ecosystem function.

Table 3-7 Management Measures Carried Forward; Puget Sound Energy must compensated for economic loss resulting from USACE implementation of additional flood storage measures which is different than purchase of additional flood storage.

3.6.2 Evaluation Criteria for Alternatives: Notably absent from this list or from any analysis is impacts to Tribal resources.

3.8.1 No Action Alternative: No meaningful analysis is provided. The statement is made: “In general, flood risk in the Skagit Basin will get worse if no action is taken.” While ignoring previous requests to undertaken meaningful climate change analysis in this GI, the Corps, as a basis for moving forward states that flood risk will get worse, without any quantification of that risk. The GI goes on to state

> The non-Federal sponsor predicts that there will be an increase in future population and there are numerous environmental challenges to maintenance of existing levees to comply with regulations which further renders the No Action Alternative ineffective

In essence, that statement indicates that existing regulations with regard to levee maintenance precludes effective flood control, but by some unknown process, future levees can be maintained to a greater degree than would otherwise be allowed. This statement makes no sense with regard to analyzing the no action alternative and is a meaningless justification for eliminating the no action alternative.

3.8.2.2 CULI with Project Condition: No meaningful or quantitative analysis is provided regarding fisheries consequences associated with this alternative. What geomorphic changes will occur to Nookachamps Creek, an important salmon producing stream? Given the additional backwater effect that will result from the construction of additional levees near Burlington, what effects will this have on fish entering or exiting Nookachamps Creek during flood events, and how will this levee change the habitat features at the mouth of Nookachamps Creek? How many addition fish will prematurely be diverted to salt water associated with increased velocity associated with increased channel constraints? How will sediment be routed through the estuary and what will the long term impact to estuarine wetlands resulting from increased export of sediments? Will eelgrass beds be adversely impacted by increased export of sediments?

In the absence of any new studies or data analysis, we must conclude based on our many years of Skagit River fisheries and fish habitat management and existing literature describing habitat salmon habitat requirements, that there will be severe consequences associated with the projects as stated above. We believe that the CULI will result in damage to fish populations due to degradation of habitat associated with the construction and maintenance of new levees and toe rock proposed for protecting the levees. Increased offshore export of sediment due to additional channel restrictions in the face of increasing magnitude and frequency of flooding associated with climate change will negatively impact the maintenance and formation of critical estuarine habitats. The project as proposed will result in an increase in the export of juvenile salmon associated with increased velocities contained within the channel. Additional erosional forces will have adverse impacts on the little remaining high quality salmon habitat within the project area.

3.8.2.3 CULI Feature Descriptions. 4.7 miles of additional riprap is proposed for this alternative, No quantitative analysis as to the fisheries impacts or loss of fish habitat associated with this alternative is provided. The fact that the study team will continue to evaluate the need for toe protection during the design phase to minimize to the extent necessary to reduce environmental impacts is not an adequate assessment of impacts necessary for a DEIS.

Baker Dam operations: The DEIS does not properly characterize the future without project condition with respect to Baker sockeye and fails to recognize the importance placed on sockeye production within the Baker River Settlement Agreement that forms the basis for the Baker Project FERC issued license on which the USACE was a cooperating agency. The level of analysis in the DEIS does not live up to commitments made by the USACE to the relicense parties for analysis of additional flood storage during the Baker Project Settlement Agreement discussions. Settlement Article (SA) 107 (b) and 107(c) were incorporated into the Baker River Settlement Agreement as a place holder for future USACE action as was made clear in a USACE FERC filing on December 21, 2004 signed by Colonel Debra Lewis. It was also clear from the December 2004 filing that the USACE did not believe the environmental analysis

done for the FERC license met the requirements of NEPA and ESA with respect to additional flood control measures and that additional flood storage would require a thorough evaluation by the USACE. To date no additional studies (after the relicense period) of the environmental effects of additional flood storage have been undertaken. It is our understanding from our participation in the Baker FERC relicense that SA 107(a) is the existing flood control language defining the flood storage and flood season with the drawdown date requirements (November 15 for the additional 58,000 acre-feet) set by the existing Congressional authorization. SA 107(a) does not specifically provide for earlier drawdown of Baker Reservoir that is to be defined and evaluate by the GI and subsequent Congressional authorization. SA article 106(c) provides an earlier drawdown schedule in Table 2 in the event the USACE request additional flood storage and redefines drawdown date requirements at the Baker project through the GI and FERC.

There is an emphasis on sockeye in the Baker Settlement Agreement because it is the species that will fare best in a reservoir environment. There is also a moderate Coho run in the Baker system but the remaining salmon species and steelhead have largely been extirpated from the watershed. The Baker River Settlement Agreement (and FERC license that incorporates the SA) contains articles aimed at maximizing sockeye smolt production: Article 101 provides for production of up to 14.5 million sockeye fry as well as the opportunity for the Fisheries Comanagers (the Tribes and WDFW) to enhance the reservoirs via the introduction of nutrients to increase production; Article 105 provides new smolt passage facilities aimed at efficiently moving smolts out of the system and reducing residualization. Maximizing sockeye production from the Baker system is necessary to partially offset the ongoing impacts to tribal resources from recommitting the Baker River basin to hydropower production and flood control for another 50-year period. The future without project condition for sockeye production in Baker and Shannon reservoirs is the maximum number of sockeye smolts that can be produced under the reservoir elevation schedule in Table 1 of Settlement Article (SA) 106.

The DEIS acknowledges a potential effect of reservoir drawdown being loss of salmonid rearing habitat through a reduction of euphotic zone volume but incorrectly surmises that the impacts to sockeye would be minor due to several mitigating factors. The DEIS lists those mitigating factors as: a 2004 report that states Baker Lake could produce 2-3 times more smolts, zooplankton abundance in 2010 in Lake Shannon that suggest excess productive capacity exist, the drawdown is largely in the winter when euphotic zone volume is less important for fish production, the annual volume of drawdown would not be different with additional flood storage, and reducing euphotic zone volume may concentrate zooplankton making winter foraging easier. The DEIS compares the future proposed action to past conditions and fails to recognize the difference between the future proposed action and the future without project condition. The difference between the future without project condition (SA 106 Table 1) and the future with project condition (SA 106 Table 2) is that under the without project condition the annual drawdown (and associated reduction in euphotic zone volume) occurs largely in November after the sockeye growing season, whereas under the proposed action the drawdown occurs in September and October there by reducing the productive capacity of the reservoirs during the sockeye growing season. The proposed action does not reduce the euphotic zone volume during the entire sockeye growing period but relicense studies showed water temperatures and prey availability such that sockeye growth during the September and October draw down period is likely significant. Some of the potential impacts of reducing productive capacity in that period are reduction of over winter survival, reduced smolt fitness the following spring, and delayed smoltification from age 1 to age 2 thereby creating competition between year classes and further decreasing overall smolt production. Those potential impacts must be studied before the EIS can be completed. The potential for drawdown concentrating prey making winter foraging easier is more of a speculative statement and question for further analysis than a mitigating factor. Some of the prey items would likely exit the system with the drawdown. Also the seasonal drawdown would be the same but the euphotic zone volume during September and October would be smaller so there would likely be less prey to concentrate during early winter under the proposed action than the future without project condition.

The DEIS states that "peak spawning would be minimally affected by the adoption of Article 107a and b, because the start date of October 1st would be the same for the proposed early drawdown at Upper Baker Dam and additional flood storage Lake Shannon as the No Action condition". That is simply not the case. At Upper Baker Reservoir under the No Action condition drawn down is very gradual with only 0.66 feet of drawdown occurring in the first week of October and 3.3 feet occurring in all of October. Under the proposed action drawdown begins in early September and nearly 10 feet of drawdown occurs in September prior to peak spawning. One important impact of earlier drawdowns on wild spawning sockeye is restricted access to distributary channel and terrace tributary spawning habitat. One specific example of this loss of effective spawning habitat is the far left bank channel of the Upper Baker River. The channel is fed by hyporheic flow from the Baker but is isolated from direct river flow by a large gravel berm that has been in place for decades. Sockeye access this channel at higher reservoir elevations and spawn in the channel that stays largely wetted after drawdown by a hydraulic control. That same hydraulic control is a barrier to fish access when the reservoir is drawn down to medium high levels. While much of the sockeye production of the Baker is achieved through hatchery fry production the wild spawning population provides critical insurance against a catastrophic loss of sockeye production in the hatchery through landslide or disease. Much of wild spawning in the drawdown zone is lost due to dewatering or scour after the drawdown is completed so access to stable incubation habitat is critical.

The DEIS repeatedly mischaracterizes SA 107(b) and 107(c) as an "option to purchase" additional flood storage in the reservoirs. SA 107(b) and 107(c) are place holders for future USACE action and analysis for which PSE would need to be compensated for economic loss if implemented but that is far different than an "option to purchase".
Major Road Crossings: Details of a permanent mechanical floodgate installed in West Mount Vernon should be provided. Details on the circumstances under which this gate will is operate, and the consequences of operating this gate on fisheries resources should be provided.

We believe that a more appropriate analysis would be one that looks at the preferred alternative both with and without change in Baker operations to determine the relative economic and environmental costs

4,4 Past, Present or Reasonably Foreseeable Please explain the statement that the Skagit Delta Tidegate and Fish Initiative which is a collaborative, multi-stakeholder process requiring up to 2,700 acres of delta lands may be converted to estuarine habitat. Either 2700 acres of conversion is required, or it may happen, but it can't be both. What does the Corps believe will occur, and how does this inform the selection of a preferred alternative? It is our understanding that this is a target but not an obligation.

4.5.2 No Action Alternative: This section mischaracterizes Baker FERC license as providing an option for the purchase of additional flood storage. The Baker License contains a place holder for future USACE study and action on additional flood storage not an option for purchase.

4.5.2.1 Climate Change: Please see the above referenced letter from the Skagit Climate Science Consortium. It appears that if conservative climate change predictions are correct the expenditure of approximately $225 million for project construction plus approximately $800,000/year will result, by 2070 will not achieve the project deliverables as stated. This type of analysis is seriously lacking from this investigation.

4.1.2.3 This section states that effects of riparian habitat would be exacerbated with the CULI alternative, and that the level profile will be unchanged riverward of the crown *whenever practical*. Based on this information, how has the Corps determined the extent of mitigation necessary to offset the impacts of

implementation of this alternative? In addition, in light of project increases in flood frequency and magnitude associated with climate change, what analysis was undertaken to determine the resiliency of existing riparian vegetation with increased level height and channel constraints? For example, it appears that the existing 100 foot riparian zone in the vicinity of Lions Park will be jeopardized by the construction of a floodwall in close proximity, which would increase erosive forces during flood events. Because of the current scarcity of adequate riparian vegetation, the construction and maintenance of new dikes and placement of toe rock will seriously compromise the amount of habitat available to sustain both ESA listed and non-listed stocks.

4.1.2.3.1 Cumulative impacts to Riparian Habitat: Please provide a quantitative analysis of how the Corps reached a conclusion that impacts would be similar to those described in the No Action Alternative. Please show how increased velocity, erosive forces and increased sediment movement will result in no cumulative effects to riparian resources. Please show your analysis as to impacts on vegetation on wooded islands in the lower Skagit delta associated with physical changes associated with the CULI alternative.

4.13.3.1 Large Woody Debris. Assurances that proper mitigation will occur, without defining where and to what extent this mitigation will occur provides no basis for analysis. Please provide the analysis that demonstrates that logjams and riparian plantings of large trees could occur on 44% of the total project length, and please provide maps detailing where this might occur. Further, under what process will the Corps determine how much of this planting and installation will actually take place?

4.14.1.2 Existing Conditions: Fish: Despite the fact that proposed changes in flood control operations in the Baker River may have significant impacts on sockeye salmon, there is virtually no discussion regarding this particular species and their role in the Baker River settlement.

4.14.2.2 No Action Alternative: There section does not address Baker River sockeye issues

5.1.1 Bake Dam Optimization: The DEIS states that 30% of floods occur between October 1 and November 15 but it does not differentiate the severity of those floods. The majority of the early season floods are minor and only one larger flood has occurred prior to November 15 during the 82-year period of record.

The DEIS states the increase Baker flood storage is consistent with the 2008 FERC license which allows for additional flood control operations if a number of conditions are met including compensation to PSE for forgone hydropower generation and dependable capacity. The USACE has failed to live up to its commitment to the relicense participants to thoroughly study the environmental effects of additional flood storage.

5.1.6 Cost Benefit Analysis: There should be an analysis of the cost to recreational or commercial fishing enterprises as a result of the proposed alternatives.

5.8.3 Conceptual Mitigation Measures There is no mention of Baker Sockeye or measures necessary to adequately mitigate for lost production

6.16 Federal Treaty Obligation: While the GI in general accurately reflects the scope of the Trust obligation of the Corps, the implementation and development of this General Investigation Study would indicate no particular commitment to this obligation. Since 1976 the Tribe has asked repeatedly for

detailed analyses of the impacts of proposed flood reduction measures on Tribal fisheries resources. These requests have fallen on deaf ears as clearly evident in this GI. While it is true that we have attended many meetings throughout the years, there is no indication that our presence at these meeting has had any impact on the development or conclusions in this GI. The Corps within this DEISh has treated the Tribe as a mere stakeholder and has not undertaken any assessment of impacts to Tribal resources. Merely stating that the Corps recognizes that it has Treaty obligations, but failing to elaborate on what those obligations are or how they will be met may be a dereliction of its Trust obligations.

Appendix C Section 3.2

Please explain why the 500 year floodplain was chosen as the basis upon which to calculate damageable property. It appears to us that a number was chosen to maximize the extent of damages. Why wasn't the 1% or .4% ACE level chosen?

Appendix D. Section 2.

No quantitative analysis has been provided to assess impacts to salmon habitat or impacts to salmon populations. The Skagit Chinook Recovery Plan states that

> Recommendation 15: Construction of new dikes and levees should be prohibited unless mitigated for, resulting in no net increase in isolated floodplain area or additional loss of floodplain habitat

No such analysis has been undertaken to determine that there is no net loss of floodplain area.

> Recommendation 31: Construction of any new capital facilities should be prohibited within the channel migration zones of the Skagit, Sauk, Suiattle and Cascade Rivers

This element of the Chinook Recovery Plan has been ignored. No quantitative evaluation of the adequacy of mitigation measures has been presented.

> Recommendation 35: New construction within the high water mark should only occur after an analysis of site specific as well as reach level impacts associated with new bank hardening projects is completed, and fully mitigated for with proven techniques. The loss of existing side channels, flood plain functions, and the physical processes that will allow for the development of these processes should be prohibited.

This element of the Chinook Recovery Plan has been ignored. No quantitative evaluation of the adequacy of mitigation measures has been presented. We are confused by contradicting statements in the plan regarding levee vegetation. In one part of the plan the COE states that it follows ETL-110-2-583 where the preferred levee toe protection is rip-rap without any vegetative cover, yet other parts of the plan acknowledge the benefits of shrub vegetation cover on water quality. No analysis has been provided to let the reader understand how these two competing interests will be reconciled. The CULI alternative has proposed is inconsistent with NOAA's Skagit River chapter of the Puget Sound Chinook Recovery Plan and will impede recovery of ESA listed chinook.

Section 2 Potential Adverse Effects on the Aquatic Environment.

The report provided in this section does not provide the requisite environmental analysis pursuant to NEPA. Section 2.1.1 CULI alternative states

> Mitigation for this effect could include planting along a levee bench, planting riparian vegetation, set back levee, construct side channel, install habitat weirs ,and/or anchor root wads to restore fish habitat values by providing vegetative cover, hydraulic diversity, nutrient input, and instream cover. Cumulative effects to riparian habitat would slightly contribute to overall loss of riparian habitat in the Skagit Basin

Merely providing a litany of potential mitigation measures is meaningless. There is no context to the mitigation, evaluation of the adequacy of mitigation, or commitment to any one or any suite of mitigation measures adequate to result in no net loss of habitat, fish, or Tribal fishing opportunities. While a preferred alternative has been chosen in this DEIS, no commensurate selection of preferred mitigation measures has been identified.

Section 2.1.2 JLS Bypass Alternative and Section 2.1.3 Swinomish Bypass Alternative

As above, no meaningful environmental analysis has been provided

Section 2.3 Finding

The Findings section in this section is at best speculative, and at worst a cursory analysis that avoids any real assessment of relative impacts between alternatives. A general analysis of impacts associated with alternatives, absent any quantitative analysis is insufficient to meet the requirements of NEPA, nor is it adequate to assess impacts to Tribal resources.

To summarize, in the more than 30 years of reviewing NEPA documents, this is far and away the worst NEPA analysis that I have ever evaluated. It is absolutely deficient in providing any meaningful analysis of environmental consequences, impacts to Tribal resources, or Tribal fishing opportunities. Despite the Tribes involvement in Skagit flood reduction efforts since the mid 1970's, the expenditure by the Corps, Washington State, and Skagit County of millions of public dollars, and untold numbers of meetings, solicitations and responses for scoping comments, and requests from the Swinomish Tribe that an adequate, defensible and complete analysis of the impacts to fisheries resources, this DEIS ignores major potential environmental consequences of the project. Despite exhaustive information provided to the Corps from pre-eminent climate scientists specializing in climate change impacts to the Skagit River watershed, the Corps has failed to adequately incorporate meaningful climate science in its analysis.

What is most disheartening is that the Corps and the County could have evaluated an alternative that provided a mix of benefits that would have overcome the shortcomings of its lack of analysis of environmental impacts based on current conditions as well as projected impacts associated with climate change. This would result in an alternative that would no doubt engender a much greater level of community support than what we expect will result from this alternative. The Corps and County could have blended alternatives that could have included sections of levee setbacks that would have had additional flood control benefits as well as salmon habitat elements that would have truly mitigated likely impacts. Instead, an alternative was chosen that is redolent of an analysis that would have been undertaken in the 1950's: raise the levees, increase storage associated with hydroelectric dams, and obfuscate the environmental consequences and ignore obligations stemming from Treaties between the

US Government and Native American communities. The Tribe is committed to insuring that its Treaty reserved resources will be protected both in the present in for many generations yet to come. We expect to stay actively engaged in the ongoing development of these alternatives. We can only hope you will take our comments seriously and incorporate major changes into your final EIS.

Sincerely,

Larry Wasserman

Environmental Policy Director

Cc: Senator Murray

Senator Cantwell

Representative Larsen

Representative DelBene

Governor Inslee

OBJECTIONS TO AVON BYPASS PROJECT AND RELATED PHASES THEREOF
BY
SWINOMISH INDIAN TRIBAL COMMUNITY
LaConner, Washington

This statement is submitted on behalf of the Swinomish Indian Tribal Community and members of the Swinomish Reservation to the Corps of Army Engineers in connection with the public hearing held at the Elks Lodge, Mount Vernon, Washington, November 22, 1963, at 1:30 p.m.

It is the position of the Swinomish Indian Tribal Community and the members of the Swinomish Reservation, Skagit County, Washington, that the Avon Bypass Project and other projects related to dredging, widening or changing the natural channels and water flow of the Skagit River may well affect the salmon runs. If such occurs, then the Swinomish Indian Tribal Community and the members of the Swinomish Reservation will consider this as a violation and deprivation of the rights granted under the Treaty of Point Elliott of 1855.

Adequate information is not presently available to determine the effect such projects would have on the salmon population in the Skagit River. Such information will be accumulated and furnished at a later time.

In conclusion, objection is made to these projects insofar as they, or any of them, may interfere with or affect the salmon population. Salmon fishing is the major source of livelihood for the Swinomish Indians, and denial or deprivation thereof would cause great hardship.

SWINOMISH INDIAN TRIBAL COMMUNITY

By BANNISTER, BRUHN & LUVERA

By Stanley K. Bruhn
Attorneys for Swinomish Indian Tribal Community.

BANNISTER, BRUHN
& LUVERA
ATTORNEYS AT LAW
616 S. 2ND STREET
MOUNT VERNON, WASH.

From:	Mikey Ellis
To:	NWS-Skagit-River-GI
Cc:	Tara Ellis
Subject:	[EXTERNAL] Skagit River General Investigation Study
Date:	Tuesday, July 15, 2014 7:39:54 PM

Sir/Ma'am,

I would like to voice my opposition to the study, and any plans to build a levee that would jeopardize my home at 10793 Sterling Rd, Sedro-Woolley. I purchased my home knowing I was purchasing a home in the flood plain, my residence was elevated prior to my purchase, and qualifies for a FEMA certification, allowing me to purchase low-cost flooding insurance. In the past 10 years living here, we have seen a few floods, none of which have affected our residence.

We survived Burlington's last attempts to dike Gage's Slough, the city built a dike to protect Burlington properties during a flooding event. This dike also backed flood waters up into my neighborhood. My home was spared, some of my neighbors did not fare as well.

Needless to say, there has been a lot of speculation about all the soil Burlington has been stockpiling, folks believe Burlington is going to use the dirt to build a levy to protect Burlington residential and commercial properties. That's great for Burlington, but the backed up flood water will affect everyone up river from it. Property values will plummet (including mine). The city of Sedro-Woolley will see major flooding in residential area that have not previously seen flooding. As a police officer for Sedro-Woolley I fear for the safety of our citizens, and know our small department will be woefully unprepared to respond to a large scale flooding event.

I would encourage you to reconsider allowing any levees down river, and consider options that would allow emergency draining of flood waters into Puget Sound, not allowing them to back up into residential and commercial areas.

Thank you for your time and consideration.

Respectfully,

Michael Ellis

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

As we are property owners in Sedro Valley we are gravely concerned with the proposed plans. We ask at the risk is transfered to our town. It is not right that flood traditionally, not flood that town that does threatened by your actions. Please include everyone concerned in your deliberations.

Karen Leibrant 635 Bennett St,
Vernon Leibrant

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☐ Yes ☒ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print).

Name Karen Leibrant Affiliation (Optional) _____

Address 3807 Cogrant Rd

City. Everson State: WA Zip: 98247

Email vernonleibrant@outlook.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
15 JUL 2014 PM 5 L

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

JUL 15 2014

Please fold form in half and tape closed to mail

9812437555

SKAGIT COUNTY AGRICULTURAL ADVISORY BOARD
1800 Continental Place
Mount Vernon, WA 98273
Phone (360) 336-3303
Fax (360) 336-9478

July 10, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

RE: Draft FR/EIS for the Skagit River Flood Risk Management General Investigation Study

Dear Ms. Hadley,

Below are comments and concerns from the Skagit County Agriculture Advisory Board (AAB) regarding the draft FR/EIS.

The fundamental issue that is not sufficiently addressed in the Skagit General Investigation draft FR/EIS is the expedited removal of flood waters from the floodplain after an event. The highest risk to public safety and costliest damage to property is when flood water remains for extended time on the land and over roads. What must be addressed, whether or not an alternative is implemented, is construction of multiple outlet structures in the sea levees that would open at low tide and allow the water to escape.

The Comprehensive Urban Levee Improvement Alternative will redirect significantly more water to the Samish River. In 2009, the Samish River flood covered roads for days, cutting off Samish Island and leaving flood waters on land for weeks. When the Skagit is redirected to the Samish, the damage caused will be this same scenario multiplied many times. The Samish River Basin drainage infrastructure is not capable of handling this significant increase of water and needs to be improved. An insurmountable hurdle to improvement is the current regulations that govern when and how this can be done. It is imperative that the Army Corp facilitate the cooperation of the multiple state and federal agencies to give assurances to the Drainage Districts to maintain and improve the drainage infrastructure. This same infrastructure will be utilized to drain the floodplain after an event and will be vital for a quick recovery.

The AAB is requesting a response from the Army Corp for the questions below regarding the proposed implementation of the Comprehensive Urban Levee Improvement Alternative:

1. At what river flow velocity, depth and height will water spill at Sterling into Gages Slough and travel north of Burlington Hill?
2. In past flood events, Dike District 12 sandbagged the railroad tracks parallel to Hwy 20 to stop the water from spilling into Gages Slough. Without this effort will there be more frequent flooding of the Sterling Hill area?
3. What kind of water velocities will there be across the farm land and how much scouring will this cause?
4. What are the projected inundation areas and depths from post project conditions? How long will flood water remain on the flood plain?

5. How will the Baker Dam storage increases offset the transfer of risk in the Nookachamps and Sterling areas and is this taken into account in the projected flood heights?
6. What guarantees can the Army Corp give drainage districts to conduct emergency repairs and remove sediment from ditches after an event without waiting for the approval of permits?
7. What are the projected increases in river heights south of Mount Vernon?

To this end, the Skagit County Agricultural Advisory Board supports the increase in the Baker Dam storage. We also request that the Army Corp investigate and facilitate the construction of outlet structures in appropriate locations to remove flood waters from the floodplain. Thank you.

Sincerely,

Nels Lagerlund, Chair
Skagit Agriculture Advisory Board

Cc: Skagit County Board of Commissioners

From:	Cheryl Bolden
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River General Investigation Study
Date:	Wednesday, July 16, 2014 2:29:40 PM

Ms. Hadley,

We are writing as concerned Sedro-Woolley citizens who are opposed to the Comprehensive Urban Levy Improvement Plan as it currently stands. We understand that it is important to view the big picture and what is best for all concerned. However it is nonsense to consider a plan that would or could protect some areas of Burlington and Mount Vernon and jeopardize an area in Sedro-Woolley with three schools on site, let alone many, many residences and historical buildings. That is quite unreasonable to sacrifice schools for malls and businesses. We feel that additional studies need to be completed and more information collected prior to any decisions regarding this plan.

The city of Sedro-Woolley needs to be represented in further meetings!!

John and Cheryl Bolden

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
316 W. Boone Ave. Suite 450
Spokane, WA 99201-2348

phone 509-323-2900
fax 509-323-2909
web site www.wa.nrcs.usda.gov

July 16, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Hadley,

Washington NRCS appreciates the opportunity to review the draft integrated Feasibility Report and Environmental Impact Statement (draft FR/EIS) for the Skagit River Flood Risk Management General Investigation study. Our comments are combined into one response.

1.9 states:
"The Corps has been closely coordinating with NRCS with regard to the status of this GI and their conservation easement program." Yet, I did not see any analysis of the effect of the various alternatives on our easement programs, specifically the Wetland Reserve Program (WRP) and the Farm and Ranch Lands Protection Program (FRPP). Have you determined if there are NRCS easements or other NRCS projects in the footprint of the alternatives and quantified the impact in terms of numbers of easements, acres involved, and dollars spent? If not, this needs to be done. If we have to modify existing easements or potentially change where we enroll future easements, the impact needs to be spelled out and the Corps needs to know what is involved. Our preference is for easements to be avoided, so they need to be mapped out within each alternative.

Section 4.19.1
Page 166, 2nd paragraph – Change National Resources Conservation Service to Natural Resources Conservation Service.
This section should quantify the impacts to prime farmland for each of the action alternatives. The No Action alternative should identify the acres of prime farmland within the project area, not just in the County. According to NRCS policy on the Farmland Protection Policy Act (FPPA):

> "Each alternative considered in [an]…environmental impact statement (EIS) should have been evaluated for farmland protection, and the results of the evaluation shown in the discussion of the alternative. This will allow the cumulative impacts of each alternative to be judged and considered in the decision making process."

Page 167, 1st paragraph, last sentence. The correct definition of Prime Farmland should be used. It is:

> "Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture. Prime farmland includes land that possesses the above characteristics but is being used currently to

produce livestock and timber. It does not include land already in or committed to urban development or water storage."

6.11
Recommended edits are shown below:

The purposes of the Farmland Protection Policy Act (FPPA, 7 U.S.C. § 4201 et seq., 7 CFR 658) are to:

- Minimize the extent to which Federal contribute to the unnecessary and irreversible conversion of important farmland to nonagricultural uses,
- Encourage alternative actions, if appropriate, that could lessen the adverse effects on farmland, and
- Assure that Federal programs are operated in a manner that, to the extent practicable, will be compatible with State, units of local government and private programs to protect farmland.

~~The FPPA protects Prime and Unique farmland, and land of statewide or local importance. The Farmland Protection Policy Act protects forestland, pastureland, cropland, or other land that is not water or urban developed land. The Farmland Protection Policy Act requires a Federal agency to consider the effects of its action and programs on the Nation's farmlands. This Act is regulated by the NRCS. The NRCS is authorized to review Federal projects to see if the project is regulated by the Farmland Protection Policy Act and establish what the farmland conversion impact rating is for a Federal project.~~ NRCS is the agency responsible for ensuring that FPPA is implemented. As a Federal agency, USACE has a responsibility to lessen the effects of conversion activities on farmland and to ensure that actions are compatible, to the extent practicable, with State, local, and private programs to protect farmland. The FPPA applies to Federal actions that would convert important farmland to nonagricultural uses. Under FPPA, NRCS provides technical assistance to Federal agencies to help them limit the conversion of productive farmland to nonagricultural uses by providing site assessments that include a rating of the relative farmland value of alternative sites.

The tentatively selected plan would affect prime farmland along the increased footprint of levee. ~~During feasibility-level design phase, USACE will provide the NRCS with project maps and descriptions to assess impacts on Prime and Unique farmlands.~~ [USACE should not wait until the feasibility level design phase, but do it prior to release of the Final EIS, so that impacts to prime farmland can be compared among the 3 action alternatives.]

Sincerely,

Deborah Virgovic
WA NRCS State Fisheries Biologist

From:	LisaMarie Swanson
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River General Investigation Study
Date:	Wednesday, July 16, 2014 2:47:55 PM

Good afternoon,

I am writing to formally include my comments for consideration regarding the Skagit River General Investigation Study recently published by the US Army Corr of Engineers and Skagit County. The proposed actions are unacceptable.

Reducing flood risk for one town while increasing it for another does not help the county at large. Any plan to reduce flood risk along the Skagit River, for Skagit County, needs to address the flood risk of the entire county, not simply shift it around for the maximum profit. Proceeding with this plan essentially states that a business in Burlington has more value than my family home in Sedro Woolley.

Recent SCOTUS decisions aside, here in my community, businesses aren't people, and people need to come first. The safety of the people, property, and pets of Sedro Woolley must have more priority than the profit of Burlington and Mount Vernon's businesses.

I beg you to reject the recent study, for reasons of its unacceptable risk to Sedro Woolley.

Sincerely,

Lisa Marie Swanson

From: Elaine Wright
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Public Comment
Date: Wednesday, July 16, 2014 10:22:44 AM

When I first saw the Army Corps of Engineers proposal, I was reminded of "The Three Little Pigs", except the government didn't step in and knock down the third pig's house to protect the first two pig's homes.

When we moved to Skagit County 27 years ago, we moved to Sedro Woolley. When we decided to build quality Built Green homes we chose Sedro Woolley because it is a wonderful community and it the area doesn't flood. We have nine properties in Sedro Woolley, seven are on Dunlop Avenue. This area has never flooded; if the proposed levies go in, they will flood. We will have to purchase flood insurance for all the houses. We will have to raise the rent to cover our additional costs, which will reduce the number of people who can afford the rent. In addition, forcing our property into the flood area will reduce their market values. Had the property been in a flood area, we would probably never built the houses. If we had decided, against all good sense, to go ahead with the project, we would have certainly considered flood elevations and flood mitigation measures prior to construction.

The building that will be protected in Burlington have mostly been built in the last 30 years. The area of Sedro Woolley that the Corps proposes turning into flood area, has many small older homes that have never flooded. It is my opinion that the owners of the buildings in Burlington should take the risk for building in a flood area, not the people who had the good sense to build or purchase homes in an area that never floods. Why should the few poorer people of Sedro Woolley have to pay the price for the not so smart richer people who built in a flood area?

I live on Buchanan Lane in Clear Lake. When it floods, I can't use the Swan Road. The proposed levies will isolate the hill and everyone that lives on it. I will be unable to get to work in Sedro Woolley, except by boat. I prepare payrolls for approximately 200 people. They will be without their paychecks.

Many of my neighbors are quit old. One of my neighbors, who has lived on the hill for 70 plus years, told me that he has been trapped on the hill one day in all the years he has lived there. That will change with the proposed levies. They will be isolated from emergency medical services.

The social and financial costs of the proposed levies to the residents of Sedro Woolley and Clear Lake are astronomical. It is clear to me that these small communities were never considered. This proposal is not a good idea. There has to be a better alternative.

--
Elaine Wright

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

We have to do something to protect Dells Dr Wadleys & Fort Beldgun

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

I don't want Sea Wall to be flooding

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Sharon Metcalf Affiliation (Optional): _____

Address: 202 Lake Ave

City: Sedro Woolley State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
11 JUL 2014 PM 3 L

USA

JUL 17 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

981243755

From: falltier@frontier.com
To: NWS-Skagit-River-GI
Cc: falltier@frontier.com
Subject: [EXTERNAL] Skagit River General Investigation Study
Date: Thursday, July 17, 2014 8:25:21 PM

Dear Ms.Hadley,
I am contacting you in regards to the information I received about proposed changes in the height of levies downstream from my home in Sedro Woolley. I currently reside on Fidalgo Street and have been here through many floods, including ones that have come over the roadway two blocks from my home. We also own a home behind us on Jameson Street. These homes have been here over 100 years and have never flooded and there has never been a cause for us to worry. If our homes flood, much of the town of Sedro Woolley will also flood due to the elevation of the rest of town being the same. My concern is that increased levy heights will cause this to happen and that we will then be required to purchase flood insurance. Something that has never been needed before. This will also be cause for a decrease in the value of our homes and should we ever choose to move, make it harder for us to sell our homes. It is my understanding that the areas of Sterling Road would receive higher flood waters that would also affect our hospital and a nearby care center. The flooding of roadways will cause an unsafe situation for people in need of emergency care East of us as well as communities across the river, including Clear Lake. Loss of income for many that will be unable to go to work because of road closures. What you may not realize, but that should have been very apparent, is that the areas that you are not considering in the proposed changes are lower income and have a higher poverty level and these people will be the most affected by loss of income. Most of these people are not employed in their local areas as there is not enough jobs in their communities to support them. Why is it that the proposed improvements are only to benefit Burlington and Mount Vernon areas and that all other areas are being disregarded? Is it also my understanding that there would be changes made to Gages Slough and that natural fish and wildlife habitats would also be destroyed? There has been a lot of time, money and effort by many put in to restoring these habitats so the idea that this would once again be destroyed is quite troubling. There have been previous lawsuits regarding these exact issues in reference to changing of levy heights and also changes in natural tributaries that cause an increase in flood levels but it seems as though that is being disregarded. These same issues were voted against in 1979 so why is it that they are once again being pushed through when they were previously rejected? I have many concerns regarding these changes and feel that this is something that should not be decided by the chosen few who are most likely to benefit from it.
A response to my letter would be greatly appreciated.

Sincerely,
Shannon Burrow
300 Fidalgo St
301 Jameson St
Sedro Woolley, WA 98284
360-855-1630

Skagit River General Investigation Study

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June 6 – July 21, 2014

We want to hear from you!!

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at SkagitRiver@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

heaven is in charge of Mother Nature decision to put
up the Skagit River Flood Control Project
River is fine the way it is Leave it Alone!!!
provement Plan is wrong. It would be a Destruction
Nobody should control the residents of Skagit county.
Plan It would be a Bad idea and this should
not be done. If the Western Parts of Skagit
County go under water Peoples lives, homes,
jobs and buisness would be destroyed. A School
strict (Sedro Woolley School District) would be effected. The
have to rebild 2 Schools, Mary Purell and Centra
ould be out of ork, kids taken out of school
would these Peop ive? People (not affore
People w A To many ves will be effect
Not Right!!! If the Western Parts of Skagit
move and to over. We are fo li pay
this d ause the economy of Skagit
do not water ut ned to flood
ins nce cal (valley
to fail. Flood insurance is expensive and people should
not have to pay it. My entire like would be
effected. This Plan of putting Levys in and forcing
Skagit county Residents to pay flood insurance is
The worst thing anyone could do to this valley.
I hope the people of Skagit Valley rise up and fight this.
This is a great evil that needs to be stopped

US Army Corps of Engineers · Seattle District

Skagit River General Investigation Study

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June 6 – July 21, 2014

Stop this Plan!!!

Is there anything additional that should be addressed or considered during this study? Please be specific.

Stop this Plan of building levys, flooding Skagit County and forcing the residents to pay flood Insurance. Sedro Valley

Do you reside within the Skagit River [illegible] ☑ Yes ☐ No

Would you like to be added to the Skagit River G[illegible]ral Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
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JUL 1 7 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

98124375555

Please fold form in half and tape closed to mail

From:	Jeanette Hoffman
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Transferring risk or flooding from Burlington.
Date:	Thursday, July 17, 2014 7:43:35 PM

I am asking that the levies not be raised in Burlington causing more flood risk in Sedro-Woolley.

This is not a community that can absorb the additional costs of Flood Insurance or flood damage.

Thank you.

jeanette.a.hoffman@gmail.com

Jeanette Hoffman
532 Nelson Street
Sedro-Woolley 98284
360-421-8343

From:	Pola Kelley
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Sedro-Woolley concerns for GIS on Skagit River
Date:	Thursday, July 17, 2014 4:44:38 PM

To Hannah Hadley

Dear. Ms. Hadley:

In a former position I was an Allstate Insurance Agent, I know how much difference the diking near Mount Vernon and Burlington has as an impact to other areas of the Skagit River Watershed. Sedro-Woolley prides itself on having built primarily above the flood plain and residents and business owners know the value to their properties being in zones outside the 100 year flood plain. It does not take a genius or an engineer to know that if you push the water higher it will back up. Children can play with this concept at the Children's museum. We find the plan to protect Mount Vernon and Burlington at the expense of the rest of the county to be irresponsible and can not support such a decision.

--

Pola Kelley
Sedro-Woolley Chamber of Commerce
Executive Director

From:	Lea
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Sedro Woolley Flooding
Date:	Thursday, July 17, 2014 7:16:47 PM

Dear Ms. Hadley,

I live in Brickyard Estates, north Sedro Woolley. I have spent time looking at old flood pictures and perusing flood maps. My husband and I are currently shopping for another residence. I am not totally ignorant of the flooding issues in the Skagit Valley.

The owners of the businesses and homes in Mount Vernon and Burlington were completely aware of the flood history in the areas where they built. And now, they want to make it Sedro Woolley's problem. Sedro Woolley is not as affluent as Mount Vernon and Burlington, so I guess it okay to flood us. We don't have the money or the voice of these other towns, combining their financial impact on the local economy. I do not understand how a bad decision (to build in a flood zone) is the responsibility of those who did not make that bad decision. I think the towns should suffer the consequences of their decisions. Mount Vernon and Burlington are not too big to fail...oops, too big to flood.

If a solution to the flooding potential in Mount Vernon and Burlington can be managed in a different way, rather than increasing the flood possibility in Sedro Woolley, I am all for it. A flood is a horrible loss for all involved. I wish that on no one, but Sedro Woolley is not a throw away town. We matter too.

Thank you for your time and consideration.

Sincerely,

Lea Shato
735 Brick Lane
Sedro Woolley, WA

From: Elisabeth Waldron
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Skagit Valley Levy"s
Date: Thursday, July 17, 2014 11:39:49 AM

Hello Hannah Hadley,

I am writing in regards to the tentatively selected plan of putting levy's in Mt. Vernon and Burlington. This plan is not an "improvement" plan but a complete plan of destruction and devastation to Skagit Valley. This plan will not help with the flooding but make the flooding worse. It could possibly destroy the entire western Skagit Valley in many ways since the areas where it could flood are highly populated with businesses, schools, homes, farm land ect.

If levy's are put in Mt. Vernon and Burlington and the water backs up and floods Sedro-Woolley and surrounding areas in the valley peoples homes, property's, business's would be destroyed. The Sedro-Woolley School District has 4 Elementary schools that will be effected, Big Lake, Clear Lake, Central, and Mary Purcell. If it were to flood during the school year they would have to cancel school for a long time. After the flooding would go down it would take a long time for those schools to be properly cleaned so the kids could return to school. The school year should not be interrupted by a flood. Kids need to be in school. Business's would have to close and would not reopen for along time until those were cleaned. How would an entire valley and millions of people prepare if they were told they had to evacuate due to flooding!? Skagit Valley and the City of Sedro-Woolley would be devastated.

If flooding does not occur that bad then almost the entire western Skagit Valley would be forced to pay flood insurance. That includes Schools that would be effected when that money should stay in the schools for the kids. Business's would also have extra expenses that would hinder them from growing as a business. Flood insurance is expensive and many people will not be able to afford it. I do not believe we should be forced by anyone to pay for something we do not want to pay for. The people who live in the City of Sedro-Woolley choose to live here because IT DOES NOT FLOOD HERE and we do not have to pay flood insurance. Extra expenses like that could make the Skagit Valley fall into an economic collapse.

I don't believe the people who are in charge of the decision making are taking all these possibilities into consideration and if they are they don't care about people. If these parts of Skagit Valley do not flood now then LEAVE THE RIVER ALONE!! PUTING UP THESE LEVY'S IS THE WORST THING THAT COULD COME TO THIS VALLEY!!
HAVE A HEART AND CARE MORE ABOUT PEOPLES LIVES!!! I hope that the people of the Skagit Valley rise up and speak out against the levy's. I pray this tentative selected plan to put up levy's is defeated and stopped for the well being of the Skagit Valley and it's residents!!

Thank you.

THE LORD IS KING FOREVER AND EVER; THE LORD SHALL BE KING OVER ALL THE EARTH.
PS10:16/ZECH14:9

Jones & Smith

Attorneys at Law

Gary T. Jones **Gail R. Smith**

July 15, 2014

Hannah Hadley, CENWS-EN-ER
Army Corps of Engineers
Seattle District
PO Box 3755
Seattle, WA 98124-3755

Re: Skagit River GI Study Feasibility Report and EIS Comment

Dear Ms. Hadley:

This letter comments on the draft Feasibility Report & Environmental Impact Statement published June 6 and presented at a public meeting on Thursday, June 19, 2014 in Mount Vernon. The undersigned attended that meeting as a representative of Skagit County Consolidated Diking Improvement District No. 22, Skagit County Diking District No. 17 and Skagit County Diking District No. 3. Our office also advises Skagit County Drainage and Irrigation Improvement Districts No. 15 and No. 17.

These special purpose districts governed by Title 85 Revised Code of Washington provide benefits to particular land within geographic boundaries where landowners voted to approve an engineered set of improvements, taxed themselves to build, and thereafter annually to operate and maintain diking and drainage improvements. These districts rely on technical assistance and flood fighting personnel of the Seattle District Army Corps of Engineers in declared emergencies and to restore damage due to flooding. The diking districts participate in the USACE administered Rehabilitation and Inspection Program, have signed Cooperation Agreements under Public Law 84-99 and use the Engineering Manuals published for nonfederal flood control works as a guide. The Districts accept as valid the statement of the problem in the Feasibility Report, and welcome the opportunity to reduce flood risk from overland flow from October to March and year around. The districts generally agree with the Goal and the two Objectives stated in the Feasibility Report and Tentatively Selected Plan (TSP) called Comprehensive Urban Levee Improvement (CULI).

The documentation of environmental constraints concerning three ESA listed species of salmon appear to be outdated in Appendix D because of reliance on U S Fish and Wildlife Service August 1997 Reconnaissance Study, and a cluster of letters received in 2001. There is no evidence of ESA consultation with NOAA NMFS or USFWS. This heading is left blank except the notation (pending). The Feasibility Report and EIS do not take account of the habitat restoration work that has been initiated and completed during the past 15 years. It also includes a list of threatened and endangered species as of 1997 and therefore omits Puget Sound Chinook salmon.

415 Pine Street · PO Box 1245 · Mount Vernon, WA 98273
Telephone (360) 336-6608 · Facsimile (360) 336-2094

The named Dike Districts plus District No. 1 and District No. 12 completed levee restoration to repair damage done in 2003 and 2006 floods during the "fish window" in 2011 under Cooperation Agreements with USACE. Accounting for delayed response to their damage survey reports that should have been remedied within one year, and for permit conditions, the Districts and USACE may have spent more money on mitigation of salmon habitat than was spent on restoring the levees. This statement is not made to discount the importance of environmental impact mitigation or the federal share of mitigation costs but to point out the risks to life and property which have occurred because of Endangered Species Act consultation, specifically about Puget Sound Chinook salmon habitat.

The Districts contend that the completed Skagit watershed projects and those which are in progress should be sufficient off site mitigation for CULI because of its focus on urban infrastructure. In support of this contention we offer the Three Year Implementation salmon plan for the Skagit Basin 2014-2016 following the 2010 strategic approach. See also the Strategies document prepared by Western Washington Agricultural Association for the preservation of the environment and the agricultural community, and the cover of the Skagit Delta Tidegates and Fish Initiative Implementation Agreement May 28, 2008, plus the Skagit Stream Team Annual Water Quality Report for 2012-2013. Readers of the Feasibility Study and EIS should not assume that the problems described in the letters attached to Appendix D accurately describe unmitigated habitat impacts on salmon that should be remedied in the implementation of the "Tentatively Selected Plan" or the pending ESA consultation.

The flood damage reduction plan set forth in the Feasibility Study does not recognize the steps that have been taken to implement the 2005 Chinook Recovery Plan approved by Skagit River System Cooperative and Washington Department of Fish and Wildlife. That Recovery Plan reset in 2010 has become the focal point of Skagit Watershed Council's vision of fish habitat. Significant partnerships have been developed in the Skagit watershed to achieve salmon habitat restoration. For example, Puget Sound Energy, Seattle City Light, The Nature Conservancy, North Cascades Institute and the Skagit River System Cooperative have all implemented substantial changes and invested in fish habitat. Wiley Slough Habitat Restoration Project in District No. 22 is one large example. The Fir Island Farm project is another example of Washington Department of Fish and Wildlife converting public lands inside District No. 22 to fish habitat during the Study time frame. District No. 3 has setback levee on Dike Road and cooperated with The Nature Conservancy and Drainage District No. 17 to create the Fisher Slough Habitat Restoration Project.

The National Marine Fisheries Service and the U.S. Fish and Wildlife Service are consulting with the U S Forest Service, Washington Department of Natural Resources and Washington State Department of Ecology and the Federal Emergency Management Agency including its National Flood Insurance Program to mitigate loss to spawning habitat, incidents of mass wasting on steep slopes, forest road washouts and methods of operating dams on the Baker River and the Skagit River to protect fish habitat and lower the peak flow during flood events in the lower Skagit Valley. The future of forestry and fish can be made more secure by implementing the Tentatively Selected Plan when recognition is given to the fish habitat conservation efforts that have been made and the commitments already in place.

The Districts endorse the concept of preparing for a flood that exceeds the 1% chance standard. Rainfall and snowmelt vary widely year to year. The Chehalis River experience shows that our region can receive 20 inches of rain in a 48 hour period. Preparing for such an event increases the chance of surviving without loss of life and the chance of sustaining property damages that are manageable. It cannot eliminate all risk. Those who live on the floodplain and in particular those who operate diking and drainage facilities want those facilities to be resilient and capable of functioning in extreme circumstances to limit damages. The primary way of limiting property damage in such a flood is to limit the maximum rise and duration of high water surface elevation on the flood plain.

Reducing water surface elevation and flood water velocity through adequate interior drainage requires adding infrastructure at salt water outlets. Concurrently providing more capacity for overland flows through roads and other barriers is essential to this approach. Controlled release of flood water to receiving salt water through pumps, tidegates and floodgates could avoid breaching salt water dikes. This key challenge to the feasibility of the Tentatively Selected Plan is not adequately described in the document.

The 2014 feasibility study describes a Tentatively Selected Plan (TSP) for a watershed at risk. Although there are risks of earthquake, fire, wind and dam failure, the most predictable and devastating hazard to the watershed is flooding. Flooding could destroy homes, businesses, city infrastructure, roads, bridges, utilities and disrupt the regional economy. The consequences of failure of the Skagit River Bridge recently brought into focus the dangers to the regional economy from cutting Interstate 5.

Skagit County and USACE made plans to flood proof Skagit County in earlier feasibility reports 1962 and 1979. Each time the people have been unwilling to vote local funding essential to implement the plan to reduce flood risks. Except for residents of Nookachamps and Fir Island, who suffered devastation in 1990 the majority of Skagit watershed residents have paid a low price for voting not to fund flood risk reduction. Whether events such as Katrina and the Chehalis flooding have changed public opinion remains to be seen. However, there is broad acceptance of the “Tentatively Selected Plan” because of the communication initiated by Skagit County government to inform citizens and the various municipal and special purpose district elected representatives serving locally.

The TSP is consistent with the essential elements of the Growth Management Act. The Act mandates population and public investment concentrated in urban areas. Natural resource lands and rural lands should be managed for low population density and high natural resource production. This vision of Skagit River watershed includes farms, forests, and fish as essential to a healthy community. The Districts urge the state and county government to align their plans for the Skagit watershed to reduce flood risk and realize a viable future with farms, forestry, and fish. In the short run the multijurisdictional hazard mitigation plan can do this. By building an early warning system, managing dams and keeping debris off bridges, coordinating the incident command structure, training leaders, including special purpose district commissioners and volunteers during annual flood awareness week drills, the Tentatively Selected Plan can reduce risk. The FEMA Community Rating System is implemented year round by Skagit County

Planning and community Development to reduce flood risk in those areas that do not receive urban protection.

Skagit County is required to adopt a Shoreline Master Plan update. RCW 90.58.100(1)(h) allows the Master Plan to approve measures to reduce flood risk of statewide interest. The Districts advocate a Shoreline Master Plan that incorporates future flood gates and added interior drainage to accommodate the statewide interest in flood damage reduction and coordinate the Tentatively Selected Plan with Skagit County Shoreline Management Master Program. This comment urges coordination of the measures in the Feasibility Study TSP and the Skagit Shoreline Master Program in the Skagit River and Skagit Bay, Joe Leary Slough and Padilla Bay, as well as Samish River and Samish Bay, and all of their special purpose district improvements.

There are dissenting voices who justly ask whether the risk reduction in the Skagit River Basin will increase the risk in the Samish River Basin including Thomas Creek. These questions should be answered by the representatives of Sedro Woolley, Burlington, Nookachamps and Clear Lake, who appear to be affected by measures at Sterling blocking Gages Slough, at Burlington Hill directing over bank water to Joe Leary Slough, and at the Hospital and Wastewater Treatment Plant "ring dikes" which displace Skagit River water.

One of the keys to understanding the Tentatively Selected Plan is to measure the impact of ring diking the Sedro-Woolley Wastewater Treatment Plant, the hospital complex on SR 20 and the Sterling cut off of Gages Slough for the benefit of the City of Burlington. These measures may direct flood water toward the Samish River. The risk increases in proportion to the volume and velocity of water that comes to Sedro-Woolley from the upper valley. Under certain extreme circumstances it appears to be unavoidable that flood water will reach the Samish River and earlier GI feasibility work by Noel Gilbrough of the USACE showed that even the "no action" alternative sent flood water to Thomas Creek and Samish River.. Consequently, the changes necessary to protect Old Highway 99, Interstate 5, the Burlington Northern Santa Fe railroad track and other landowners whose damages would be increased by high water surface elevations north and east of Burlington should be part of anticipating how flood water will pass to Samish or Padilla Bay without damaging and impairing salt water dike and drainage infrastructure.

Each of these special purpose districts have a significant bridge or bridges that are a factor limiting downstream passage of flood water. Changing bridges is expensive. Changing one bridge may cause the next bridge downstream to be less safe. The Tentatively Selected Plan lacks details about the monitoring and removal of debris to reduce the risk to bridges at Division Street, Conway and Rexville as well as Interstate 5 and the Burlington Northern Santa Fe railroad bridge. Debris management was studied in 2006 with funding from the State Department of Transportation and resulted in debris management protocols which are vaguely referenced in the EIS.

The diking districts and drainage districts aim to protect life and property by reducing flood damages in their limited jurisdictions and appreciate what has been done to articulate a practical plan for a comprehensive project with broad public support.

Thank you for the opportunity to comment.

Respectfully yours,

JONES & SMITH

GARY T. JONES
GTJ/lfd

cc: Commissioners District No. 3
Commissioners District No. 17
Commissioners District No. 22
Commissioners Drainage District No. 15
Commissioners Drainage District No. 17
Kara Symonds SCPW
Betsy Stevenson SCP&CD-Shorelines

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From:	Sally
To:	NWS-Skagit-River-GI; Sally Crawford; Jim Crawford
Subject:	[EXTERNAL] 801 Jennings Street.
Date:	Friday, July 18, 2014 11:41:53 AM

It would appear that the plan is to raise the levy down river from Sedro Woolley. If that is the case then the city of Sedro Woolley will indeed flood where it has never flooded before. All of the people who spent their lives paying for homes that were previously safe from the floods will now suddenly be at great risk. Flood insurance is expensive and will not be of much consolation when every thing that used to be safe is now gone. Where I live has not flooded in recorded history, but now this would all change. Does this make me happy? No it does not!Further it sounds like people who chose to build in areas of risk will be rewarded for their choice because they now outnumber those of us who did not!

Roger and Sally Crawford
801 Jennings St.
Sedro-Woolley, a. 98284.

From:	Sutton, Loretta
To:	NWS-Skagit-River-GI; Hadley, Hannah F NWS
Cc:	Allison O"Brien; Lisa Treichel; Roy Zipp; Alan Schmierer; NPS NOCA Superintendent; NPS WASO EQD ExtRev
Subject:	[EXTERNAL] DOI Comments - USACE Skagit River Flood Risk Management
Date:	Friday, July 18, 2014 1:25:58 PM
Attachments:	DOI Comments on USACE Skagit River DEIS.pdf

Ms. Hadley,

This email transmits the U.S. Department of the Interior's (DOI) comments on the USACE's DEIS for the Skagit River Flood Risk Management General Investigation Study.

Thank you for the opportunity to provide comments.

Loretta Boldin Sutton
Team Leader, Natural Resources Management (Acting)
U.S. Department of the Interior
Office of Environmental Policy and Compliance (MS-2462)
1849 C Street NW
Washington, DC 20240
Tel: 202-208-7565
Fax: 202-208-6970
Email: Loretta_Sutton@ios.doi.gov

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

TAKE PRIDE IN AMERICA

9043.1
PEP/NRM

JUL 18 2014

ER 14/360

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Hadley:

The U.S. Department of the Interior (Department) has reviewed the U.S. Army Corps of Engineers (USACE) Draft Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS) for the Skagit River Flood Risk Management General Investigation Study. We offer the following general and specific comments based upon the analysis, and areas of jurisdiction and special expertise of our National Park Service (NPS), and in consultation with other federal, state, and tribal stakeholders.

General Comments

The Department acknowledges that the USACE and Skagit County undertook a very complicated, costly, and socio-politically sensitive set of issues. However, we believe that the DEIS has missed the opportunity to take a broader, more holistic, and comprehensive approach to mitigating flood risks, given the 50 year planning horizon. We also believe that the DEIS disproportionately emphasizes structural flood control measures.

The Department believes that given the long range planning horizon, it is a fundamental shortcoming that the potential effects of climate change in relation to future flooding were not considered due to "uncertainty." We recommend that "uncertainty" be incorporated and not disregarded, especially given the potential risks to life and property should predictions prove valid.

The potential effects of climate change in regard to the nature and magnitude of hydrologic change likely to affect the Skagit River are very well modeled and documented. Notwithstanding the uncertainty, the effects of climate change on the hydrology of the Skagit River should have been carefully considered and incorporated into alternatives development given; (a) the very long planning horizon; and (b) the very real potential for enacting measures that may be insufficient and/or may encourage further development in areas where flood risks cannot be reasonably mitigated should climate change result in more serious future flooding, which is predicted. Adapting to climate change now, as opposed to 50 years from now, would be

far less costly and impactful to future generations. We believe that this oversight is a serious flaw to an otherwise reasonable impact analysis.

Specific Comments

During the USACE's scoping period our NPS expressed concern for adverse effects to the Wild and Scenic Skagit River, fisheries, recreation, and public access. To varying degrees the DEIS addresses each of these topics, and we appreciate that the USACE considered these concerns. We generally agree with the impact analysis on these topics, with the exception of potential effects to anadromous and resident fish.

Given the current adverse baseline, we are very concerned about further adverse effects in regard to potential impacts to the sockeye, steelhead, Chinook, bull trout, coho and coastal cutthroat trout stocks in the Baker River, which originates in the North Cascades National Park. As noted in the DEIS, existing flood control measures on the Skagit River, most notably levees, in addition to widespread development within the floodplain, have caused long-term adverse effects including loss of floodplain function; loss of riparian function, including streamside cover and nutrient input; loss of channel and stream bank complexity; lower rates of large woody debris recruitment, etc. These effects have occurred throughout the lower Skagit River, and combined with the effects of dams on the upper river have resulted in a reduction in quality and quantity of habitat for anadromous and resident fish.

We believe that the DEIS does not fully take into account the adverse impacts to the afore-mentioned fish stocks in Baker Lake and potentially underestimates the adverse effects that would result from maintaining lower lake levels for flood storage purposes. The Department asks that the USACE revisit their analysis of potential impacts to the Baker River sockeye fishery.

The Department believes that the mitigation measures for the adverse effects of flood control measures as described in the DEIS are too vague and conceptual. We urge the USACE and Skagit County to provide greater clarity as to specific mitigation measures that would be enacted. The Department further believes that offsite mitigation will be needed. There are several opportunities within the North Cascades NPS Complex to mitigate past impacts to the Skagit River and its tributaries, most notably in the vicinity of the confluence of Goodell Creek, and the Skagit River in Ross Lake National Recreation Area (both proposed for designation as wild and scenic). The Department is presently collaborating with the Upper Skagit Indian Tribe (USIT) on restoration options in this area as there are significant opportunities to restore lost riverine functions and fisheries habitat. We request the USACE consider these opportunities for mitigation in consultation with the NPS and the USIT.

Thank you for the opportunity to provide comments, and for your consideration of our important resources. If you have any questions regarding these comments, please contact Mr. Roy Zipp, NPS, Environmental Protection Specialist at (360)854-7313, or email (roy_zipp@nps.gov).

Sincerely,

Willie R. Taylor, Director
Office of Environmental Policy
and Compliance

From:	jitoe@frontier.com
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Ms. Hannah Hadley - comment on Skagit River Dike improvement, due by July 21, 2014
Date:	Friday, July 18, 2014 11:09:55 AM
Attachments:	Flood Mitigation.docx

Please accept and read my invited comments on the project. They are on the attached Word Document.

Thank you,
John Eades
907 Alexander St.
Sedro Woolley WA 98284

jitoe@frontier.com

Ms. Hannah Hadley
U.S. Army Corps of Engineers
PO Box 3755, Seattle, WA 98124 July 18, 2014

Ms. Hadley:

My name is John Eades. My wife Barbara and I are Skagit County residents, living in southeast Sedro Woolley on our owned property at 907 Alexander St., Sedro Woolley WA. Sedro Woolley officials have recently advised residents of on-going studies and pending action by the Corps of Engineers with the eventual goal of modifying Skagit River flow patterns to mitigate flood risks (to certain select downriver property).

I could enumerate the general concerns of those residents upriver of proposed projects, but they have already been succinctly outlined in the Sedro Woolley resolution (No. 902-14) of July 10, 2014, and certainly in your possession. Instead, I request you and your technical and political personnel honestly consider that presentation empathetically, as if you and your family were in our position.

Twenty five years ago, you would have purchased property close to (but not too close, both horizontally and vertically) the Skagit River, anticipating retirement. The project was not taken lightly. The property was flat, well vegetated and in an area suited to your interests. Ten years ago, you designed a substantial home specifically for that property and over the next four years you personally constructed that home, nailing each stud and joist, erecting each wall, applying each shingle, making each electrical connection, etc., etc.

You investigated the flood risk. You obtained flooding records back to the 1930's. You acquired aerial photographs of serious area flooding from the 1940's through the present. You made flood risk decisions based on historical facts. You accepted that known risk.

Other people downriver did the same. They built homes, developed businesses, planted crops and made lives based on similar risk decisions. This is where the stories may diverge… The downriver entities made their decisions on riskier grounds, choosing that risk to take advantage of higher profit potentials or better views. They knew that risk. Then, unsatisfied with the risk, they employed the political process to improve their risk position. Their property values and population density, now of higher relative value than yours, must deserve greater protection – notwithstanding they made their previous purchase or development plans based on the same risk assessment you did. The Corps of Engineers must of course oblige. That is their ostensible job.

You wonder, where is the fairness in that?

By extension, your story is similar to hundreds of others in this area, different in detail but identical in form.

I agree improvement in flood control can be made, but only to the extent that future of the lesser is not sacrificed for the future of the greater. Apparently, under current budgetary restrictions, the needs of the lesser (read upriver, Sedro Woolley) are not conveniently addressable. They are then shut out of the conversation. I don't pretend to understand the fine points of gross hydraulics, but I recognize power politics.

I can't suggest solutions to the technical problems but they must include input from all involved in our democratic society, and certainly from those potentially most adversely affected.

Please (re) invite participation from the representatives of all those affected – Sedro Woolley, Lyman, incorporated Skagit County. If you do not, you cannot feel right about the process in light of the evaluation I have described. And if it does not feel right, it almost always is not right.

John Eades
907 Alexander St.
Sedro Woolley, WA 98284

From: Brian Ferguson
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Skagit River Flood Risk Management
Date: Friday, July 18, 2014 10:48:56 PM

To whom it may concern,

I've been notified of a potential study to improve infrastructure to the Skagit River that would improve flood safety for specific areas. However, in doing so, it would pass the risk of flood to other communities. In this case, we are talking about the town of Sedro Woolley an other communities located farther east up the river.

Based on what I've read, I will not be directly affected by the plan since my property is near United General Hospital, one of the locations the improved infrastructure is intended to be safe. However, it is highly unethical to allow such an act to take place. What this is effectively doing is transferring flood risk from a developed area that has a stronger economy and larger population of people not only living there, but visitors to the general area as well, to another town and community which is smaller, lower income, older, and is home to people who would be hit a lot harder from such devastation as a flood than their counterparts, simply because of the far fewer resources they have access to in order to maintain themselves and their livelihood.

What this does is effectively discriminate towards the community and the individual people of Sedro Woolley inherently stating that because they are an older community, with a smaller economy, they aren't very important, or as important in protecting it's people, buildings, and business as other places such as Burlington and Mt Vernon. Basically this is stating that if you live around Sedro Woolley, your life is not as important as those who live and work in Burlington and the like. As a person, and as a community, you're not worth the effort to protect. This is the same as dumping nuclear waste in a remote lake with just a couple hundred people getting their drinking water from it, instead of storing it near a large reservoir because of the risk of contaminating a body of water that is used by hundreds of thousands of people.

This plan, should it continue, is doing nothing more than placing one group of people in danger in favor of another group of people. This is a horrible notion. In a situation like this, levies aren't the answer. "Transferring" risk from one community to another is not the way to help anyone. Especially when the group of people having to take the "risk" on are less able to help and fend for themselves in the event of a natural disaster. If people are really worried about the river flooding over, then dredge the river. Costs should be roughly the same if not less. And, instead of using up more raw materials from the earth to do the job, you can gain raw materials that can be used for other projects.

In the end, no one should have to bare a burden of destruction just so someone else can live without a "burden of risk."

I sincerely hope the USACE will come up with a far better solution than to place Sedro Woolley, it's people, and surrounding communities in greater risk of flooding, just so Burlington and Mount Vernon can be better protected from a disaster.

From: egoetzin@charter.net
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Skagit River General Investigation Study - Attn: Hannah Hadley
Date: Friday, July 18, 2014 11:11:33 AM

This is in response to Mayor Anderson's Message to residents and property owners.
I was born and raised in the Burlington Edison area (class of 64). When growing up I always felt that Mt. Vernon felt superior to the rest of to towns. After moving away and then purchasing property In Sedro-Woolley, I got the impression that Burlington now feels superior to the others.

We have an rv site at Janike Cove. We were recently given notice that many of the improvements are in violation - because of floodways. And that this came about due to flood insurance rates. From your message, it seems apparent that the levee proposal is planning on flooding us out. My situation is OK - I have an RV that can be moved at a moments notice, but there are other residents that have invested their retirement into a quality life stile. This would be destroyed with the potential fiver levels. We are concerned that the focus is on the commercial areas, and not the citizens. Why are we less important?

Thank you for your efforts - keep up the good fight.

Ernie Goetzinger
23711 Cove Rd

From:	Graesser, Patricia C NWS
To:	NWS-Skagit-River-GI
Cc:	Lawrence, Aaron S NWS
Subject:	FW: [EXTERNAL] Headquarters U.S. Army Corps of Engineers Contact Form: certified levys in Washington State (UNCLASSIFIED)
Date:	Monday, July 21, 2014 7:19:35 AM

Classification: UNCLASSIFIED
Caveats: NONE

Below please find a comment regarding the Skagit GI.

-----Original Message-----
From: HQ-PUBLIC AFFAIRS
Sent: Friday, July 18, 2014 11:16 AM
To: Graesser, Patricia C NWS
Subject: FW: [EXTERNAL] Headquarters U.S. Army Corps of Engineers Contact Form: certified levys in Washington State (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Patricia,

Could you pass this along email to your project folks.

Thanks Doug

-----Original Message-----
From: noreply@dma.mil [mailto:noreply@dma.mil]
Sent: Friday, July 18, 2014 2:44 AM
To: HQ-PUBLIC AFFAIRS
Subject: [EXTERNAL] Headquarters U.S. Army Corps of Engineers Contact Form: certified levys in Washington State

This message was sent from the Headquarters U.S. Army Corps of Engineers website.

Message From: Chelsea Jepperson

Email: bookbreaker.cj@gmail.com

Response requested: Yes

Message:

You are currently considering putting certified levys in Mount Vernon and Burlington Washington. This is along the Skagit River in the Skagit River valley. You have not done complete research as to what will happen to the towns upriver from the proposed areas. Our flood waters are projected too raise by 4 to 6 feet. Also our towns have not been included in the studys circle of information, so we just recently learned that the levys were being considered. Our towns are not prepared for that kind of water increase, especially if we get a higher than average flood year. Please look into this, it seems like an obvious misuse of a levy if other towns will be directly affected in a negative way. I live in Sedro-Woolley Washington directly upriver from Burlington along the Skagit River and I would be affected by this as will my entire town. The certified levys will cause more problems in areas that are currently unaffected.
Chelsea Jepperson

530 Jameson St
Sedro-Woolley WA 98284

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

From:	DON MOE
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Letter in response to GI study
Date:	Friday, July 18, 2014 2:43:43 PM

June 19, 2014

To the members of the ACOE:

RE: The GI Study and the Comprehensive Urban Levee Improvement Alternative

First of all I would like to thank you for your work and your willingness to involve the citizens of Skagit County in this process. As a former commissioner of DD#1 and property owner in DD#1, I still have an interest in adequate flood protection, specifically through the use of interlocking sheet pile. For the record I am in no way writing on behalf of the commissioners of DD#1. Commissioners have as their mandate the protection of "all" citizens and property owners of the district and I would not want to be in the unenviable position of protecting one segment of our population [urban] at the expense of the other [rural].

After the floods in 1990 and 1995, our district decided to install over 300 ft. of interlocking sheet pile in an area with seepage problems, just to the north of Edgewater Park in West Mount Vernon. Previously installed clay keyways did not stem the flow of water under the levee in this area during those extreme floods. The sheet pile was installed approx. 4 to 5 feet above the inside bench and went to a depth of approx. 50 feet. A " ballpark" figure for the project was around $600.00 per lineal foot. No succeeding flood has penetrated this area since this project. I will submit, the 1990 and 1995 floods were large floods and long in duration.

In this process of looking for the best flood control for the money, without unfairly jeopardizing the rural areas, I would like to see the ACOE at least consider the use of interlocking sheet pile installed at the riverward top of the levee and brace the backside with rock at what will be considered overflow areas. As I understand it, the two causes of the failures of the sheet pile during Hurricane Katrina were: Not having the sheet pile deep enough to withstand the surge and not having material on the backside that could withstand the overtopping by the surge. Defending against a large flood on the Skagit River is not totally unlike the situation in New Orleans.

If we are going to spend this kind of money on the project, one way or another lets make sure we can keep our dikes intact during a catastrophic flood. The Comprehensive Urban Levee Improvement Alternative may well be the best alternative. Rural property owners are being asked to "bear the burden" of 100yr.+ floods. If our rural dikes are built to withstand a 175,000 cfs flow and we get a 200,000 cfs flow, let's make sure 175,000 cfs stays in side the levee. If we get a 250,000 cfs flow, again, let's make sure we have done as much as possible to keep 175,000cfs inside the levee.

Elevating and strengthening of urban area levees makes sense. Armoring of expected overtopping in rural areas also makes sense and then the obvious need for proper drainage so rural areas, and the entire community affected can return to normal with as little damage as possible .

No project will satisfy everyone, but I like the direction this project is going and look forward to its eventual completion.

Respectfully,

Donald Moe

16706 Penn Rd.

Mount Vernon, WA. 98273

From: Lea
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] One More Thing
Date: Friday, July 18, 2014 5:46:06 PM

Dear Ms. Hadley,

After penning my response to the proposed dyke improvements for Burlington and Mount Vernon, it occurred to me that purposely engineering a flood prevention system that floods areas of Sedro Woolley, previously NOT in the flood plane, in an attempt to alleviate flooding in Mount Vernon and Burlington, you would be leaving Skagit County and perhaps the State of Washington open to a serious class action law suit. I think they call it "malice aforethought." You might want to consider the legal repercussions of such a studied change.

Thank you again for your time and consideration,

Lea Shato
735 Brick Lane
Sedro Woolley, WA

Unfold in the Bliss of Being

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

JUL 18 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Does not make alot of sense about this project.
Need more information to make sense.
Very unclear what these maps mean.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

more impact it would have on Sedro-Woolley

Do you reside within the Skagit River Basin? ☑ Yes ☐ No part time

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Tim Adams Affiliation (Optional): _____

Address: 47 Twin Oaks Trail

City: Cepp State: Arkansas Zip: 72538

Email: tkadams@centurytel.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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7-13-14

Remarks, Comments, Concerns

ALOWING THE LOWER SKAGIT TO RAISE DIKES THAT WOULD RAISE RIVER LEVELS AT FLOOD STAGE IS TOTALY UNACCEPTABLE. OUR TAXES ARE INCREASING EVERY YEAR. IT BECOMES MORE OF A BUARDEN TO PAY TAXES TO FUND STUDIES LIKE THESE THAT HAVE THE POTENTAL TO CUT OUR OWN THROATS. I IMPLORE YOU TO BE FAIR HANDED FOR ALL CITIZENS WHEN DOING THESE STUDIES THAT COULD BECOME LAW.

EUGENE P. HEATH
23687 COVE RD
SEDRO WOOLLEY WA
98284
360-856-4180

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

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_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☒ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

I have lived in Janicki Cove Community for 17 years, it is right on the river. I have never been flooded and now I will be totally flooded out if the GI Study goes as planned with the 100 year flood.

What is more important to Skagit County, citizens and their property and lives or big business?

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

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Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Kay Brunk Affiliation (Optional): _____

Address: 23810 Cove Road

City: Sedro Woolley State: Wa Zip: 98284

Email: N/A

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. **Thank you!**

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Remarks, Comments, Concerns

It seems that areas with big business and the bigger towns will benefit from the proposed plan & the impact on small businesses and land owners east of Burlington & Mt Vernon. Water would be backed up on those areas and dikes will now be needed. Will those who have to pay for the dikes be providing any financial aid to those affected? I doubt that's going to happen nor does anyone seem to care. Elected officials should represent all constituents not just bigger cities and box stores.

US Army Corps of Engineers
Seattle District

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Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Larry & Judith Coshe Affiliation (Optional): _____

Address: 23621 Cove Rd

City: Sedro-Woolley State: WA Zip: 98284

Email: JMLASHE@live.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

I live in Janicki Cove. We have been asked to remove all Park Motel housing units, storage sheds, and other structures that can hinder the flow of water in the flood way. This would cause the water to rise in the flood plain. This was initiated by FEMA, EPA and other government agencies. Now it appears the Army Corp of Eng. is going to raise dykes and put in new dykes that will do exactly what Janicki Cove has to remove our structures to prevent what the dykes will do. Do these government agencies talk at all? You go figure. Everyone get thier act together.

Gary Hutsinpiller
23651 Cove Rd.
Sedro Woolley, WA, 98284

US Army Corps of Engineers • Seattle District

SKAGIT COUNTY WASHINGTON

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_____

_____

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If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

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Remarks, Comments, Concerns

Dedro Woolley is being put in harms way for the big business of Burlington and Mount Vernon

Property owners in Dedro Woolley should not have to give up their homes and lives as a buffer for dikes down rivers. We need to have protection.

We live in the floodplain of Dedro Woolley and have never flooded. Now we would risk our lives, and real property for big business

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

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Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☑ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Jerry Hoogemeyer Affiliation (Optional): _____

Address: 23778 Cole Road

City: Sedro Woolley State: Wa Zip: 98284

Email: HOEGEMEYERS@AOL.COM

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. **Thank you!**

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Jim Property Wally Wad

Our names are Sheila Huff We own at 23561 Cove Rd Bellingham

Remarks, Comments, Concerns

We are extremely concerned that the dike being built upin Burlington, Mt Vernon will cause ~~[illegible]~~ and means to gain. ~~[illegible]~~ It is unbelievable that large businesses can be allowed to destroy lives ~~[illegible]~~ The town situation is cruel and devasting. We are all prepared to boycott Burlington businesses our

This absolutely ~~[illegible]~~ serious We are stressed with ~~[illegible]~~ health issues and This will c

Sincerely,
Sheila and James Huff

Sheila

US Army Corps of Engineers
Seattle District

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Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: James & Sheila Huff Affiliation (Optional): _____

Address: 23561 Cove Rd

City: Sedro Wooley Wa State: ~~98284~~ WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

I have lived here for 13 yrs. I have been concerned since last summer when we witnessed all the truck loads of dirt & gravel being put on the levies in Burlington & Mt Vernon to protect Retail. I would like adequate detail to how properties should not be impacted. Save Burlington & Mt Vernon and impacts to Sedro-Woolley and land. I understand the flooding risk all of Burlington & Mt Vernon Store would make an impact on your decision. Please consider

Money should never be more important than people lives and land that they have worked so hard to own.

Thank you

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I am opposed to higher dikes. It will not solve the problem of flooding if the river is not dredged. We will not solve the problem by building higher and higher dikes. They need to stop clear cut logging in the area from causing the sediment to fill up the river. I am concerned about my property and being forced to pay for federal flood insurance? This is now in a non flood area, and by building higher dikes there is a very good possibility it will flood the rivers stem to Concrete WA.

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River dredging and structures in the river to control sediment build a. Clear cut ossing.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Kathleen Lathom Affiliation (Optional): _____

Address: 500 3N Todmeson

City: Sedr ey State: WA Zip: 98284

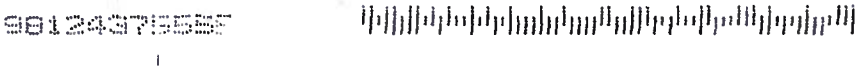
Email: vestchina@aboo.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

JUL 18 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail



Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

JUL 18 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Raising the dikes in Burlington will put thousands of families in danger that were never affected before. Seniors, widowers, single moms, children, you name it, all for the benefit of "big business." The computer model shows an enormous area that was not in danger before. All the homes are being sacrificed so the businesses will be exempt from flood insurance. Now the homes that were exempt from flood insurance will now be required to purchase flood insurance.

The millions of dollars spent on a study could have been used to dredge the river. Silt build up is where the real problem exists. If I'm not mistaken, it probably would have cost less than the study. Not only will we have to endure the cost for the dikes, but now we will have to pay higher flood insurance as it goes up 25% per year for the next 4 years.

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address. _____

City: _____ State: _____ Zip: _____

Email: ALASKANBEAR@GMAIL.COM

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

There is no question that Sedro Woolley should be involved in any decision making since it will have a big impact on businesses & homes in the Sedro Woolley area.

The people who will most likely be effected by this are the lower income people who couldn't afford to purchase flood insurance for a low purchase another home.

Is this really what it has become? We think more of big businesses than we do of our own people. This has to STOP! Listen & work with the Sedro Woolley officials to make this decision work for everyone — particularly the home owners who live in the Sedro Woolley area.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

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Think of the people first! – not big businesses

Do you reside within the Skagit River Basin? ☒ Yes ☐ No part-time

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Nancie Silves Affiliation (Optional): –

Address: 5797 Burnham Drive

City: Ferndale, State: WA Zip: 98248

Email: nsilves@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

I am a single, 65 year old woman. It is unbelievable that my retirement and well being could be "washed away" because of the greed of big business. I would be completed done. My health would be effected and my only home gone with no means to move on. I am one of many who would be effected all for big business! Many will boycott these businesses.

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

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Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: DONNA STARK Affiliation (Optional): _____

Address: 23583 Cove Rd

City: Sedro Woolley State: WA Zip: 98284

Email: cove.donna@gmail.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

have become aware of the proposal ... ra... I m to ise the dikes in Burlington offering flood protection to Mt. Vernon and B also while leav Sedro Woo ey und. water. This is lutely outer ous!! Nearly 8 ... (we loaded and the l came wit in 3 ocks south of my home but my home yo has never flooded and is not in the flood zone. By fawn to be flooded to at least 4 blocks nort her. Every Single h of my house and possibly furt ft insurance and property values would plummet probably decrease nr l putting s due to flood zones. You're posal ns my hand s properties risk and e a an entire Sed . Please reconsider and l th dikes and ro Woolley alone!!!

US Army Corps of Engineers
Seattle District

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_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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JUL 18 2014

July 12, 2014

Rog and I have lived in Janicki Cove thirteen years, have seen the Skagit river rise, fall and stayed in our home during the flood of 2003 when flood waters spilled over the banks and into our house. After reading about the "Tentatively Selected Plan, referred to as "TSP" we have grave concerns about our own safety, damage to our home and our property.

Adding four feet to the existing dike to protect Home Depot, Costco and the business community of Burlington tells us the plan under consideration is only concerned about large business interests and has little or no concern for the people and communities adversely affected in the upriver communities, which number in the thousands.

This seems to be driven by money interests since the "protected" business community will no longer have to purchase flood insurance if the footage is added to the dike. If the plan is approved as is, the upriver community interests remain ignored, we plan to mount a major upriver community boycott of ALL Burlington businesses.

Respectfully,
Rog and Gail Welborn

Skagit River General Investigation Study

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Remarks, Comments, Concerns

US Army Corps of Engineers
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SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

The possibility of dredging the river.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Roy & Gail Welborn Affiliation (Optional): _____

Address: 23584 Cove Road

City: Sedro-Woolley State: WA Zip: 98284

Email: gail.welborn@frontier.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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U.S. Army Corps of Engineers
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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Loss of property value.
Financial hardship on Cove property owners
Cause property damage
lose of lives and prop damage

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

Do a study on how fast the water flows through Janicki

Do you reside within the Skagit River Basin? ☐ Yes ☒ No own property

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Terry Wickwire Affiliation (Optional): _____

Address: 3029 E Kelly Rd.

City: Bellingham, WA 98226 State: WA Zip: 98226

Email: WICKFish2300@Frontier.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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From:	Peg Bodin
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Draft Feasbility Study - Skagit River General Investigation Study
Date:	Sunday, July 20, 2014 6:46:29 PM

Dear Hannah,

We have lived in Sedro-Woolley on Alexander Street for 24 1/2 years. Prior to that we lived in Mt Vernon in an area that required flood insurance for our home loan. When we moved to Sedro-Woolley, it was a relief that we were not required to have flood insurance any longer. During the time we've lived in Sedro-Woolley, there have been 2 significant floods. During a flood, the water moves into a deep, wide channel behind the house across the street. In one of those floods, the flood water came to 12-18 inches from the top of the channel. I am very concerned that an increase in the levy height down river will significantly increase the risk of flood damage to our home.

I have looked at the flood insurance cost for our home and found it very expensive. Much higher than insuring the house against all other risks in our homeowners insurance. I understand that flooding is expensive and that the premiums are needed to cover the resulting damage. However, I'm concerned that this project is transferring the risk and cost others knowingly took on to those of us living slightly upriver. I know that Sedro-Woolley has a free and reduced lunch rate over 50%. The rate in this neighborhood is higher than that. While I, personally, could find the funds to purchase flood insurance, I strongly believe many of my neighbors could not without a serious impact on their financial situation.

I am also concerned with the damage this project will have on our home value. Our modest home is very important to our eventual retirement. The loss of home value due to increased flood risk or worse, the loss of our home to flood damage, would be a terrible blow. I am very aware of the repeated floods in Hamilton and their impact and am concerned that we are being set up to be next in line.

Please consider this project very carefully and make sure that you appropriately protect us in Sedro-Woolley at the same time you work to protect Burlington and Mount Vernon.

Thank you. Sincerely,

Brad and Peg Bodin

1012 Alexander St

Sedro-Woolley, WA 98284

From:	Russell Hutchison
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Comprehensive Urban Levy Improvement plan
Date:	Sunday, July 20, 2014 2:16:09 PM

Ms. Hadley,

My name is Russell Hutchison II, I am the owner of 1230 Fidalgo Place in Sedro Woolley. It is my understanding that the Comprehensive Urban Levy Improvement plan is basically a plan to force myself, and hundreds of other people to purchase flood insurance because I will be placed in the flood plain by this plan. I didn't buy a house in a flood plain for a reason. Not only that but your plan will make it so my house is harder to sell if I chose to do so.

I feel as a landowner, and a resident of Sedro Woolley, that the USACE owes my City and me a fully researched plan with analysis of both East and West adjustments of the river. My city and the community has been here a lot longer than some of the areas this plan is meant to protect. Those people knew they were in the flood plain. They accepted that risk in purchasing their home. I did not. Nor am I all right with accepting it now.

Why is it acceptable to protect one community over a large portion of a small city? I do not agree with this Urban Levy Improvement Plan.

Sincerely,

Russell Hutchison

1230 Fidalgo Place

Sedro Woolley, WA 98284

From:	valerie stull
To:	NWS-Skagit-River-GI; karas@co.skagit.wa.us
Subject:	[EXTERNAL] Skagit levee
Date:	Sunday, July 20, 2014 1:09:42 AM

My family has occupied the same home for 3 generations in Clear Lake.
I understand that the homes and towns east of your lovely high levee in Burlington are to.be sacrificed for the township over there.
My home happens to be one of those which has escaped any damage from flooding since its origin in the 1880s.
Please dont throw us to the wolves.

Valerie Stull
12893 SR 9
Clear Lake, WA

From:	Debbie Allen
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River GI Study Comments
Date:	Monday, July 21, 2014 7:00:37 PM
Attachments:	Skagit River GI Study Comments, Debbie Allen, City of Sedro-Woolley.pdf

Please see attached.

Thank you,

Debbie Allen

Wastewater Treatment Supervisor

http://www.ci.sedro-woolley.wa.us/images/city_logo/banner.gif

(360)856-1100

(360)856-5269

dallen@ci.sedro-woolley.wa.us

CITY OF SEDRO-WOOLLEY

Wastewater Treatment Plant
325 Metcalf Street
Sedro-Woolley, WA 98284
Phone (360) 856-1100
Fax (360) 856-5269

July 21, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, WA 98124

Ms. Hadley:

As Supervisor of the Sedro-Woolley Wastewater Treatment Plant, I have serious concerns with the Army Corps of Engineers selection of the Comprehensive Urban Levy Improvement plan without first modeling the project. While the plan calls for construction of a ring dike to protect the Sedro-Woolley Wastewater Treatment Plant (WWTP), this measure provides a false sense of security in protecting the City's largest asset.

Skagit County Commissioner Sharon Dillon recently attended a City Council meeting and shared that she would be walking in flood waters around her home on Fidalgo Street during a 100 year event. If flood waters indeed reach this level, the City of Sedro-Woolley will have at least 5 miles of sewer pipe under water. A submerged gravity sewer system with head pressure in essence becomes a pressurized force main which will push water into the WWTP and cause sewage to over top structures. At this point, the ring dike designed to protect the Treatment Plant becomes worthless and provides absolutely no protection, all at the expense of taxpayer dollars.

Homes throughout the City will also experience internal flooding as sewage under pressure begins to spill out floor drains, toilets and bath tubs, thereby creating a potential health risk for those exposed to contaminated water.

I highly recommend the Army Corps of Engineers perform hydraulic modeling and provide this data to the City of Sedro-Woolley before taking further action.

Respectfully,

Debbie Allen
Wastewater Treatment Supervisor

From:	Ross O. Barnes
To:	NWS-Skagit-River-GI
Cc:	Skagit County Commissioners; Voetberg, Jim; swmayor@ci.sedro-woolley.wa.us; mvmayor@mountvernonwa.gov; Bell, Esco; Buckenmeyer, Fred
Subject:	[EXTERNAL] Skagit River draft FR/EIS: comments
Date:	Monday, July 21, 2014 10:40:33 AM
Attachments:	USACE Skagit Flood Proposal FR-EIS comments.pdf

July 21, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

RE: SKAGIT RIVER FLOOD STUDY DRAFT FR/EIS -- COMMENTS

My comments are attached as a PDF and also included directly in this email below.

I make these comments with great concern and astonishment after having read the recent June, 2014, USACE PowerPoint presentations in Skagit County and perused the Draft FR/EIS (FR/EIS) sufficiently, I think, to understand the basic nature of the current USACE Skagit River proposal. I hope I am missing something, but in case I understand your proposal correctly I make the following observations that suggest your proposal is technically and hydraulically fatally flawed and a threat to public safety and a vast waste of public funds to the tune of about $220,000,000 plus the usual budget inflation.

Figures 3-2 and 3-7 of the FR/EIS show the existing condition hydraulically modeled water depths in the floodplain for a "100 year flood" based on assumed likely levee failure points based on existing dike conditions. Failure points are shown as green circles with black center dots in the Figures.

Figure 3-12 of the FR/EIS shows the proposed system of urban levee improvements which is the essence of the current USACE proposal. Levees would be raised, improved and constructed around the south, east and north sides of Burlington (urban levee sections 3 to 7) to contain a 250 year flood (June Skagit County power point presentations), but no levee would be constructed on the west side of Burlington and consequently Burlington would remain open to back-flooding from the rural floodplain west of I-5 with associated rural area levees remaining at about the current 25 year flood level or whatever the Dike Districts unilaterally decide to do with their rural dikes.

Similarly, left bank levees and a new Riverbend cutoff levee would be raised to provide 250 year flood protection for most of Mount Vernon east of the Skagit River (levee sections 8 to 14). And the right bank levee would be raised to 250 year flood protection on the river bend around West Mount Vernon (levee sections 15, 16). However, the west side of West Mount Vernon and south Mount Vernon would not be levee protected and would be vulnerable to back-flooding from the adjacent rural floodplains where rural area levees remain at about the 25 year flood level or whatever the Dike Districts unilaterally decide to do with their rural dikes.

Because the current probable levee breach points at Burlington and Mount Vernon shown in Figures 3-2 & 3-7 are now plugged with the higher urban levee system, USACE illogically assumes that the rural 25 year flood levees outside of the urban levee corridor that protect the rural flood plain west of Burlington and west and south of Mount Vernon will not overtop or fail in a 100 to 250 year flood event--although,

the USACE does assume a left bank breach of the rural 25 year levee in the Riverbend area and thus proposes the section 9 & 10 Riverbend cutoff levee to prevent back-flooding into Mount Vernon from the rural Riverbend area.

Incredibly, USACE assumes this scientifically, technically, hydraulically flawed proposal will work because they only "allow" a right bank channel breach in the Sterling area east of Burlington which forces flood flows around the north end of Burlington where they will preferentially flow "downslope" northwest and southwest to marine waters and conveniently keep the unprotected sides of Burlington and Mount Vernon essentially flood free as depicted in Figure 3-15 of the FR/EIS. USACE needs to provide a technically valid argument as to why rural 25 year flood levees will successfully contain floods up to the 250 year level and thus prevent back-flooding into the unprotected western flank of Burlington and the unprotected western and southern flanks of Mount Vernon. Or USACE needs to specify what magic wand or incantation will prevent 100 to 250 year floods from over-topping and breaching 25 year rural levees.

USACE's egregiously fatal error is to assume that the likely levee breach points used for the flood plain hydraulic study as shown in Figures 3-2 & 3-7 are the only points at which a 25 year flood levee system can fail in any flood level up to a 250 year flood! Thus, if you plug the arbitrary breach points in the urban levees with an improved urban levee system, you've got the problem solved.

The USACE initially considered an "Urban Areas and Critical Infrastructure Protection Preliminary Alternative" which would have provided ring dike protection around all sides of Burlington and West Mount Vernon, but not south Mount Vernon (see Figure 3-10, FR/EIS). USACE provides no explanation for the inconsistency of leaving Mount Vernon unprotected from back-flooding from the south in this alternative when their hydraulic modeling (Figure 3-2) shows potential back-flooding up to 10' or more in south Mount Vernon in a 100 year flood which could presumably back-flood into downtown Mount Vernon. USACE removed this alternative from further consideration because "it would not provide flood risk reduction for rural areas and has high residual life safety risk for residents within the urban ring levees" (FR/EIS, page 43). In light of their statement just placed in italics, USACE provides no explanation why the current proposal was chosen when it also increases flood risk in portions of the rural flood plain and increases "residual life safety risk" for urban residents by breaking the ring dikes and leaving Burlington and Mount Vernon at risk from back-flooding from adjacent rural areas with minimal 25 year flood levees.

I provide more detailed comment in the following sections.

Rural Skagit Floodplain

The planned increased in flooding across Hwy. 20 in the Sterling area and around the north end of Burlington is an obvious feature of this proposal and I expect that affected residents and businesses, and hopefully Skagit County government, will have plenty to say about this. However, increased potential for rural flooding elsewhere is erroneously ignored in this proposal. I discuss this issue in the following sections related to likely breaches and failures of the proposed rural levee system.

Sedro-Woolley

This proposal carefully avoids any direct discussion of the implications for Sedro-Woolley. However, increased backwater effects and flood elevations in the Nookachamps and Sterling areas are given a few brief sentences and these effects can be extrapolated to the adjacent Sedro-Woolley area. Sedro-Woolley government appears to have latched on to these camouflaged implications and I leave it to Sedro-Woolley to express their concerns directly.

Burlington and Mount Vernon

250 year flood protection for the urban floodplain areas of Burlington and Mount Vernon would seem to be the focus of this proposal. However, the proposed levee system is fatally flawed with respect to this protection. The following sections discuss these flaws in more detail.

I can only hit the most essential points in this comment letter. A detailed technical critique of all of the documents behind this proposal would reveal many more errors of approximation, estimation, averaging of conditions, modeling errors, factual errors, unwarranted and misdirected assumptions, ignored conditions and effects, logical fallacies, mental confusion, and general professional and technical hubris.

Critical Nature of the BNSF Railroad Bridge

The irony of this proposal is that what was recently considered a serious impediment to flood control-- the flow restrictive, log jam prone, 100 year old, rusting, obsolete, pier washed out, BNSF railroad bridge-- is now the essential center piece of this proposal. The current flow conditions and restrictions of this bridge are essential to limiting downstream flood elevations and raising upstream flood elevations so flood waters in excess of channel capacity will flow across Hwy. 20 in the Sterling area and around the north end of Burlington (for instance, see the analyses in Appendix B - Hydraulics and Hydrology of the FR/EIS (referred to as HH)). The bridge is now so essential to this proposal that USACE must guarantee the perpetual existence of the current flow restrictive BNSF bridge. This guarantee must include the likely future events of (1) bridge failure if a massive log jam builds against the horizontal bridge girders during a major flood when river levels are above the base of the girders, and (2) eventual replacement of the 100 year old rusting obsolete bridge with a new one of modern design.

In spite of the critical nature of the current BNSF bridge to the proposed flood control plan, this proposal takes no responsibility whatsoever concerning the future conditions and existence of this bridge, which is one of the egregious and potentially fatal flaws in this proposal.

Calculations of flood elevations downstream from the BNSF bridge in HH assume 6,000 square feet of debris blockage at the bridge (HH Section 5-4, page 32). However, this assumption is unwarranted since there is no “guarantee” that such a blockage will occur or coincide with high water level. Such was the case in the 1995 flood. No debris conditions result in 100 year flood elevations significantly higher downstream from the bridge than those modeled in HH Figures 5-4, 5-5 and 5-6 (see HH PDF page 381).

At Section 2-4, HH recognizes that significant permanent riprap around bridge piers would limit the extent of channel scour under the bridge, but HH then chooses to ignore this scour limiting effect even though there is NO SPECIFIC INFORMATION on the extent of riprap scour protection which may involve most of the channel bottom. If any areas of the channel are not so protected, scour could undermine the riprap leading to riprap failure and potentially pier failure. The HH assumption of significant channel scour offsetting much of the debris blockage is thus entirely unwarranted, and all of the model calculations of high flood flow under the bridge and associated upstream and downstream water levels are of questionable accuracy.

Problems Associated With Rural Dikes Maintained at Current Circa 25 Year Flood Level

Appendix B - Hydraulics and Hydrology of the FR/EIS (HH) establishes the Probable Non-Failure Point (PNP) as the standard for estimating levee reliability throughout the river levee system (HH Section 5-2, page 29). The PNP is the flood water elevation where the probability of levee failure in the adjacent levee is 15%. However, this safety/reliability criterion is then ignored in the current FR/EIS proposal with regard to the reliability of the future rural levee system. Especially troubling is the reliability of the right bank rural levee around the west side of the Riverbend area. A breach failure of this levee would back-flood Burlington and/or West Mount Vernon through their unprotected western sides, and yet USACE refuses to contemplate such a levee failure even though 100 to 250 year floods exceed the PFP over much of this levee reach even with the proposed “urban levee” improvements #7 and #15 (see FR/EIS Figure 3-12 and HH Figure 5-4).

A similar problem with left bank rural levees exists south of Mount Vernon with potential back-flooding into unprotected south Mount Vernon from a levee failure downstream from “urban levee” improvement #14 (see FR/EIS Figure 3-12 and HH Figures 5-5 and 5-6). Again the USACE refuses to contemplate such a rural levee failure in contradiction of their PNP criterion.

A similar, but perhaps lesser problem exists with a potential right bank levee failure downstream from proposed "urban levee" improvement #15 and potential back-flooding of West Mount Vernon (see FR/EIS Figure 3-12 and HH Figure 5-4).

The PNP criterion itself is of questionable accuracy since it is based on "averaged" or "type location" soil conditions under levees and does not consider local weaknesses related to local atypical soil conditions which are unknown for most of the levee system. None of the existing levees have been subject to the height and duration conditions of 100 to 250 year floods in modern times, so experience with these levees is no prediction of performance in the big floods yet to come.

An additional problem is that flood elevation modeling downstream of the BNSF bridge "assumes" 6,000 square feet of debris blockage at the bridge (HH Section 5-4, page 32). However, this assumption is unwarranted since there is no "guarantee" that such a blockage will occur or coincide with high water level. Such was the case in the 1995 flood. No debris conditions result in 100 year flood elevations significantly higher downstream from the bridge than those modeled in HH Figures 5-4, 5-5 and 5-6 (see HH PDF page 381) making the above levee failure and back-flooding scenarios even worse.

The HEC-RAS model calculates a flow averaged water elevation across the channel width and is unable to model the real world cross channel elevation differences such as the significant elevation increases on the outside of a river bend and cross channel slope which provide the centripetal force required to turn the river around the bend. The HH flood elevation modeling ignores this serious defect in the HEC-RAS model and thus underestimates the actual water elevation on the outside of a river bend such as the Riverbend between Burlington and Mount Vernon. Thus, the problems with rural levee failures discussed above are even worse than the HH graphics show.

Well Known Problems and Errors Associated With the Mathematical Simplifications and Assumptions of the HEC-RAS Model

The mathematical formulas and procedures behind HEC-RAS calculations contain simplifications and approximations that produce both well known and poorly known errors in the output data. Nevertheless, HEC-RAS users rarely acknowledge such errors or apply corrections or adjustments even when such error correction is critical for evaluating flood containment and public safety. Refusal to acknowledge the limitations of a mathematical model compared to the far more complex dynamics of the "real world" is an example of the "fallacy of misplaced concreteness"--an unfortunately common professional, scientific and logical error. To quote Wikipedia "Another common manifestation is the confusion of a model with reality. Mathematical or simulation models may help understand a system or situation but real life will differ from the model."

When modeling errors and other uncertainties associated with estimates, averages, speculative assumptions, probabilities, etc., involve a public safety project and expense of over $200,000,000.00, this stubborn professional confusion assumes a moral and ethical dimension. The Italians have even proposed a designation of "geotechnical criminal behavior" worthy of prosecution.

This is not the place to enumerate all of the problems of the HEC-RAS model. However, one well known modeling error is critical to calculating accurate flood elevations adjacent to containment levees which is a measurement of critical centrality to this proposal.

The HEC-RAS model simplifies a real world river by mathematically straightening all the bends of the river into a straight line and thus ignores the cross channel flows, cross channel elevation differences and related velocity variations associated with the real dynamics of a meandering river. The surface elevation of a real river rises on the outside of a meander bend and the cross channel slope of a real river produces the centripetal force that forces the river to flow around the bend. This proposal confuses the flow averaged cross channel elevation output of the HEC-RAS model with the elevation profile of the real Skagit River and thus places the whole flood control scenario at risk of failure as enumerated in previous comments in this letter.

Ross O. Barnes, Ph.D.
Earth Science

13695 Harbor Lane
Anacortes, WA 98221
(360) 293-7023

References:

1. USACE. May, 2014. Skagit River Flood Risk Management General Investigation, Skagit County, Washington, Draft Feasibility Report and Environmental Impact Statement. 242 PDF pages. (referenced as RF/EIS)

2. USACE. May, 2014. (same as above) Appendix B - Hydraulics and Hydrology (composed of multiple documents and reports). 478 PDF pages. (referenced as HH)

July 21, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

RE: SKAGIT RIVER FLOOD STUDY DRAFT FR/EIS -- COMMENTS

I make these comments with great concern and astonishment after having read the recent June, 2014, USACE PowerPoint presentations in Skagit County and perused the Draft FR/EIS (FR/EIS) sufficiently, I think, to understand the basic nature of the current USACE Skagit River proposal. I hope I am missing something, but in case I understand your proposal correctly I make the following observations that suggest your proposal is technically and hydraulically fatally flawed and a threat to public safety and a vast waste of public funds to the tune of about $220,000,000 plus the usual budget inflation.

Figures 3-2 and 3-7 of the FR/EIS show the existing condition hydraulically modeled water depths in the floodplain for a "100 year flood" based on assumed likely levee failure points based on existing dike conditions. Failure points are shown as green circles with black center dots in the Figures.

Figure 3-12 of the FR/EIS shows the proposed system of urban levee improvements which is the essence of the current USACE proposal. Levees would be raised, improved and constructed around the south, east and north sides of Burlington (urban levee sections 3 to 7) to contain a 250 year flood (June Skagit County power point presentations), but no levee would be constructed on the west side of Burlington and consequently Burlington would remain open to back-flooding from the rural floodplain west of I-5 with associated rural area levees remaining at about the current 25 year flood level or whatever the Dike Districts unilaterally decide to do with their rural dikes.

Similarly, left bank levees and a new Riverbend cutoff levee would be raised to provide 250 year flood protection for most of Mount Vernon east of the Skagit River (levee sections 8 to 14). And the right bank levee would be raised to 250 year flood protection on the river bend around West Mount Vernon (levee sections 15, 16). <u>However, the west side of West Mount Vernon and south Mount Vernon would not be levee protected and would be vulnerable to back-flooding from the adjacent rural floodplains where rural area levees remain at about the 25 year flood level or whatever the Dike Districts unilaterally decide to do with their rural dikes</u>.

Because the current probable levee breach points at Burlington and Mount Vernon shown in Figures 3-2 & 3-7 are now plugged with the higher urban levee system, USACE illogically assumes that the rural 25 year flood levees outside of the urban levee corridor that protect the rural flood plain west of Burlington and west and south of Mount Vernon will not overtop or fail

in a 100 to 250 year flood event--although, the USACE does assume a left bank breach of the rural 25 year levee in the Riverbend area and thus proposes the section 9 & 10 Riverbend cutoff levee to prevent back-flooding into Mount Vernon from the rural Riverbend area.

Incredibly, USACE assumes this scientifically, technically, hydraulically flawed proposal will work because they only "allow" a right bank channel breach in the Sterling area east of Burlington which forces flood flows around the north end of Burlington where they will preferentially flow "downslope" northwest and southwest to marine waters and conveniently keep the unprotected sides of Burlington and Mount Vernon essentially flood free as depicted in Figure 3-15 of the FR/EIS. USACE needs to provide a technically valid argument as to why rural 25 year flood levees will successfully contain floods up to the 250 year level and thus prevent back-flooding into the unprotected western flank of Burlington and the unprotected western and southern flanks of Mount Vernon. Or USACE needs to specify what magic wand or incantation will prevent 100 to 250 year floods from over-topping and breaching 25 year rural levees.

USACE's egregiously fatal error is to assume that the likely levee breach points used for the flood plain hydraulic study as shown in Figures 3-2 & 3-7 are the only points at which a 25 year flood levee system can fail in any flood level up to a 250 year flood! Thus, if you plug the arbitrary breach points in the urban levees with an improved urban levee system, you've got the problem solved.

The USACE initially considered an "Urban Areas and Critical Infrastructure Protection Preliminary Alternative" which would have provided ring dike protection around all sides of Burlington and West Mount Vernon, but not south Mount Vernon (see Figure 3-10, FR/EIS). USACE provides no explanation for the inconsistency of leaving Mount Vernon unprotected from back-flooding from the south in this alternative when their hydraulic modeling (Figure 3-2) shows potential back-flooding up to 10' or more in south Mount Vernon in a 100 year flood which could presumably back-flood into downtown Mount Vernon. USACE removed this alternative from further consideration because "*it would not provide flood risk reduction for rural areas and has high residual life safety risk for residents within the urban ring levees*" (FR/EIS, page 43). In light of their statement just placed in italics, USACE provides no explanation why the current proposal was chosen when it also increases flood risk in portions of the rural flood plain and increases "residual life safety risk" for urban residents by breaking the ring dikes and leaving Burlington and Mount Vernon at risk from back-flooding from adjacent rural areas with minimal 25 year flood levees.

I provide more detailed comment in the following sections.

Rural Skagit Floodplain

The planned increased in flooding across Hwy. 20 in the Sterling area and around the north end of Burlington is an obvious feature of this proposal and I expect that affected residents and businesses, and hopefully Skagit County government, will have plenty to say about this. However, increased potential for rural flooding elsewhere is erroneously ignored in this proposal. I discuss this issue in the following sections related to likely breaches and failures of the

proposed rural levee system.

Sedro-Woolley

This proposal carefully avoids any direct discussion of the implications for Sedro-Woolley. However, increased backwater effects and flood elevations in the Nookachamps and Sterling areas are given a few brief sentences and these effects can be extrapolated to the adjacent Sedro-Woolley area. Sedro-Woolley government appears to have latched on to these camouflaged implications and I leave it to Sedro-Woolley to express their concerns directly.

Burlington and Mount Vernon

250 year flood protection for the urban floodplain areas of Burlington and Mount Vernon would seem to be the focus of this proposal. However, the proposed levee system is fatally flawed with respect to this protection. The following sections discuss these flaws in more detail.

I can only hit the most essential points in this comment letter. A detailed technical critique of all of the documents behind this proposal would reveal many more errors of approximation, estimation, averaging of conditions, modeling errors, factual errors, unwarranted and misdirected assumptions, ignored conditions and effects, logical fallacies, mental confusion, and general professional and technical hubris.

Critical Nature of the BNSF Railroad Bridge

The irony of this proposal is that what was recently considered a serious impediment to flood control--the flow restrictive, log jam prone, 100 year old, rusting, obsolete, pier washed out, BNSF railroad bridge-- is now the essential center piece of this proposal. The current flow conditions and restrictions of this bridge are essential to limiting downstream flood elevations and raising upstream flood elevations so flood waters in excess of channel capacity will flow across Hwy. 20 in the Sterling area and around the north end of Burlington (for instance, see the analyses in Appendix B - Hydraulics and Hydrology of the FR/EIS (referred to as HH)). The bridge is now so essential to this proposal that USACE must guarantee the perpetual existence of the current flow restrictive BNSF bridge. This guarantee must include the likely future events of (1) bridge failure if a massive log jam builds against the horizontal bridge girders during a major flood when river levels are above the base of the girders, and (2) eventual replacement of the 100 year old rusting obsolete bridge with a new one of modern design.

In spite of the critical nature of the current BNSF bridge to the proposed flood control plan, this proposal takes no responsibility whatsoever concerning the future conditions and existence of this bridge, which is one of the egregious and potentially fatal flaws in this proposal.

Calculations of flood elevations downstream from the BNSF bridge in HH assume 6,000 square feet of debris blockage at the bridge (HH Section 5-4, page 32). However, this assumption is unwarranted since there is no “guarantee” that such a blockage will occur or coincide with high

water level. Such was the case in the 1995 flood. No debris conditions result in 100 year flood elevations significantly higher downstream from the bridge than those modeled in HH Figures 5-4, 5-5 and 5-6 (see HH PDF page 381).

At Section 2-4, HH recognizes that significant permanent riprap around bridge piers would limit the extent of channel scour under the bridge, but HH then chooses to ignore this scour limiting effect even though there is NO SPECIFIC INFORMATION on the extent of riprap scour protection which may involve most of the channel bottom. If any areas of the channel are not so protected, scour could undermine the riprap leading to riprap failure and potentially pier failure. The HH assumption of significant channel scour offsetting much of the debris blockage is thus entirely unwarranted, and all of the model calculations of high flood flow under the bridge and associated upstream and downstream water levels are of questionable accuracy.

Problems Associated With Rural Dikes Maintained at Current Circa 25 Year Flood Level

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Ross O. Barnes, Ph.D.
Earth Science

13695 Harbor Lane
Anacortes, WA 98221
(360) 293-7023

References:

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Sedro-Woolley City Council has addressed so many concerns already that have the done so despite obvious flood risk, (1) Sedro-Woolley has been "built up" (paved over) in recent decades were established ~~100~~ years ago in environmentally river (2) who bought property specifically its stable would be thrown under the bus (or into the flood plain) have purchase despite (3) because Sedro-Woolley's lowlands would consists of farms. to the insurance our economy (4) I suspect this has something to do with Burlington's lower tax base makes us expendable, right? Perhaps better planning in Mount Vernon might have prevented the "need" for levee alterations?

~~100~~ 2 ~~years~~ 3 ~~much~~ Consider

small farms act on our and their added insurance costs alone might cause some of these go under (pun intended) buy meat, eggs produce directly from 3 such farms

money.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
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Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Carol Bohmbach Affiliation (Optional): _____

Address: 1101 Warner St.

City: Sedro-Woolley State: WA Zip: 98284-1852

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6956. Comments must be received no later than July 21, 2014. Thank you!

Ms. Carol F. Bohmbach
1101 Warner St
Sedro Woolley, WA 98284

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Remarks, Comments, Concerns

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Skagit River General Investigation Study

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_____

_____

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If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: LORRIE CHANCE Affiliation (Optional): _____

Address: 825 ALEXANDER STREET

City: SEDRO-WOOLLEY State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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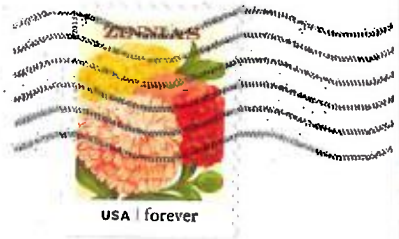

Ms. Hannah Hadley
U.S. Army Corps of Engineers
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Remarks, Comments, Concerns

This is a request that there would be an immediate study on the environmental impx for Sedro Woolley - As a business owner, a flood would devastate my business as well as all others including residents, - as well as my own. Business owners along with the chamber have done so much to improve our wonderful community and I see it growing. Please do a study so there can be improvements made to avoid a devasti such as a flood.

Thank You;
Kristi Curtis

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

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Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Kristi Curtin Affiliation (Optional): Allelujah Business Center

Address: 901 Metcalf St

City: Sedro Woolley State: Wa Zip: 98284

Email: ailcopiersystems1@yahoo.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Remarks, Comments, Concerns

As a Resident Busines owner in the
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these situations.

US Army Corps of Engineers
Seattle District

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If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Kristi Curtin Affiliation (Optional): Scott

Address: 515 Alexander St

City: Sedro Woolley State: WA Zip: 98284

Email: kristi.curtin@gmail.com

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Remarks, Comments, Concerns

Please consider the well being of my family and property ~~for~~ and the livelihood of my neighbors & fellow citizens of Lake Dooley and the communities in the eastern Skagit County. It is unfair to put us at risk by building levees down river. Other options - such as man made water ways to drain water away need to be considered. and a full comprehensive study made on the impact to up river citizens before any levees are built.

I personally am at risk if levees are built - I am a senior citizen & our home & properties & livelihood would be threatened!

Thank you.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

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Is there anything additional that should be addressed or considered during this study? Please be specific.

alternative solutions - man made water ways to drain & divert water from urban areas to the bay.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Joel & Connie Dommenbal Affiliation (Optional): _____

Address: 24238 Alexander St.

City: Sedro Woolley State: Wa Zip: 98284

Email: two door @ Comcast.net.

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CENWS-EN-ER
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LETS NOT FLOOD SEDRO WOOLLEY

JUL 21 2014

To whom it may concern including the army corps of engineers and skagit county public works.

My family and I have lived in south Sedro Woolley for over 45 years. It has never flooded in the surrounding residential area in that time or ever that I am aware of.

If the army corps of engineers and the county decide to raise the dikes around Burlington, is this a wise decision for south Sedro Woolley residents? A complete study should be done before attempting any such undertaking

I made a decision to live here based on many things , NOT being flooded out would be one of them.

Please reconsider raising the dikes to save some so others can be in harms way.

We all made a decision to live and build based on the facts at that time. Don't change the facts to benefit some.

Thank You

1505 11th pl
Sedro Woolley WA 98284

360-588-4246

Robert Gustafson

Robert Gustafson

Debra Gustafson

Debra Gustafson

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Robert Gustafson Affiliation (Optional): _____

Address: 1505 11th Pl

City: Sedro Woolley State: WA Zip: 98284

Email: bobgus46@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

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We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

If a dike was built in Mt. Vernon the Benissons would be under water. I would like to see a study to see if it would be money well spent.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☒ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Stacey Harris Affiliation (Optional): _____

Address: P.O. BOX 515 Hamilton

City: Hamilton State: WA. Zip: 98255

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

We bought this property because it wasn't in the flood zone and we didn't have to buy flood insurance. Creating flood zones to protect properties built in the flood zone and already insured is moronic. Army Corps of Engineers? Army Corps of put it to the little guy more like. This is a stupid idea and we will fight it!

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

THIS IS COMPLETE B.S.. HOW CAN ANYONE JUSTIFY THIS CREATING FLOOD ZONES TO PROTECT BUSINESS'S THAT BUILT IN THE FLOOD ZONE AND CAN AFFORD FLOOD INSURANCE.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No within 5 blocks of the river,

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: TOM HOFFMAN Affiliation (Optional): _____

Address: 809 SPERLING STREET

City: SEDRO WOOLLEY State: WA Zip: 98284-1

Email: TAGHOFFMANTOO@YAHOO.COM

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I am against the Comprehensive Urban Levy Improvement plan. I am a resident of Sedro-Woolley and I reside on Jenning st/Ave. Near Skagit River. My understanding is. If Skagit River floods, the river would Rise Come up as far as Fidalgo Streets Bhats stubblocks For Sedro-Woolley, Burlington and Mount Vernon. Can't you + also Cause be held shot on having to Buy more insurance.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Marie Hyler Affiliation (Optional): _____

Address: 921 Jennings Ave

City: Sedro-Woolley State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

The mayor of Sedro Woolley should be included to participate in the levy studies.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Jerri McDougle Affiliation (Optional): Home Owner

Address: 618 Jennings Ave

City: Sedro Woolley State: WA Zip: 98284

Email: jmcdougle618@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980

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USA FOREVER

Jerri Mc Dougle
618 Jennings Ave.
Sedro Woolley, WA 98284-1926

JUL 24 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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9612437555

Skagit River General Investigation Study

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

I live in Sedro Woolley on Jennings where you have proposed to flood my home. We have lived in our home for 42 years and never once been flooded. That includes the 100 year flood plain we are currently not in. BUT if this levy goes in we will be flooded.

The owners of the businesses and homes in Mount Vernon and Burlington were completely aware of the flood history in the areas where they built. And now, they want to make it Sedro Woolley's problem. Sedro Woolley is not affluent as Mount Vernon and Burlington, so I guess it's okay to flood us. I don't think so. We don't have the money or the voice of these other towns, combining their financial impact on the local economy. I do not understand how a bad decision (to build in a flood zone) is the responsibility of those who did not make that bad decision. I think the towns should suffer the consequences of their decisions.

If a solution to the flooding potential in Mount Vernon and Burlington can managed in a different way, rather than increasing the flooding possibilities in Sedro Woolley, I am for it. A flood is a horrible loss for all involved. I wish that on no one, but Sedro Woolley is not a throw away town. We matter too.

I do not want my home to become like Katrina in Mississippi.

US Army Corps of Engineers • Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
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Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Jack McDougle Affiliation (Optional): Home owner

Address: 618 Jennings Ave

City: Sedro Woolley State: WA Zip: 98284

Email: mcdougleijj@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Jack McDougle
618 Jennings Ave
Sedro Woolley, WA 98284-1926

FEB 21 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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I do not want my home to become like Katrina in Mississippi.

US Army Corps of Engineers · Seattle District

From:	Kimberlee Hutchison
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Fwd: Hannah letter
Date:	Monday, July 21, 2014 10:09:30 AM

I Also do not agree with this levy measure.
Sincerely

Kimberlee Hutchison

---------- Forwarded message ----------
From: Russell Hutchison <temberred@gmail.com>
Date: Sun, Jul 20, 2014 at 2:14 PM
Subject: Hannah letter
To: Beautiful Kimberlee Hutchison <kimberlee.hutchison@gmail.com>

Ms. Hadley,

My name is Russell Hutchison II, I am the owner of 1230 Fidalgo Place in Sedro Woolley. It is my understanding that the Comprehensive Urban Levy Improvement plan is basically a plan to force myself, and hundreds of other people to purchase flood insurance because I will be placed in the flood plain by this plan. I didn't buy a house in a flood plain for a reason. Not only that but your plan will make it so my house is harder to sell if I chose to do so.

I feel as a landowner, and a resident of Sedro Woolley, that the USACE owes my City and me a fully researched plan with analysis of both East and West adjustments of the river. My city and the community has been here a lot longer than some of the areas this plan is meant to protect. Those people knew they were in the flood plain. They accepted that risk in purchasing their home. I did not. Nor am I all right with accepting it now.

Why is it acceptable to protect one community over a large portion of a small city? I do not agree with this Urban Levy Improvement Plan.

Sincerely,

Russell Hutchison

1230 Fidalgo Place

Sedro Woolley, WA 98284

From:	Shannon Lauder
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] We do NOT support
Date:	Monday, July 21, 2014 3:02:54 PM

Ms. Hadley

We are the owners of 1218 Fidalgo Place in Sedro Woolley. From what I understand about the Comprehensive Urban Levy Improvement Plan, if this happens we will be forced to carry flood insurance.

Born and raised in Skagit county we knew the potential for flooding. When we decided to purchase a house we intentionally purchased outside of flood zone. We are a struggling couple barely able to make ends meet as is in our economy. I fear that the addition of flood insurance to our monthly bills may be more than we can afford. Although the housing market is getting better. We cannot afford to sell and once again find a home outside of the flood zone.

I do not understand why one town (that has always known the potential for flooding) is being prioritized over another.

Please take into consideration the financial hardships that will be forced upon long time homeowners.

Sincerely,
George and Shannon Lauder
1218 Fidalgo Pl
Sedro Woolley, WA 98284

Sent from my iPhone

From:	Roger Mitchell
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River General Investigation Study - Comment
Date:	Monday, July 21, 2014 12:24:44 PM
Attachments:	Comment on Skagit River General Investigation Study Scoping Summary Report for the Draft Feasibility Study and Environmental Impact Statement revised February 2012.docx

---

Ms. Hannah Hadley,

Please see my attached comment for the record.

Please confirm receipt of this message and of inclusion of my comment in the record.

Thanks

Roger Mitchell
Bow, WA

Comment on Skagit River General Investigation Study – Scoping Summary Report for the Draft Feasibility Study and Environmental Impact Statement revised February 2012

by Roger Mitchell
Bow, Washington

Any one of the stated flood risk management alternatives will have profound impacts on thousands of Skagit County citizens, taxpayers, and property owners, our local economy, and our general well being. Citizens or their instituted government should not take the decision lightly.

With years of information gathering, computer modeling, and discussion, no one actually knows if any proposed flood mitigation plan will actually work. What we do know, with an enormous amount of historical accuracy, is that it will cost way more than is currently estimated. Despite the many years of study and gazillions of dollars spent thus far, it will still be a crapshoot.

My preferable option would be a bypass solution that would move water through the Skagit Valley without inundating farms, homes, businesses, schools, roads, and other areas.

My major concern is that rural, private property owners and our much-needed agricultural community will, once again, bear the brunt of whatever action is taken. Pages 1-2 of "Skagit River General Investigation Study Scoping Summary Report for the Draft Feasibility Study and Environment al Impact Statement" (revised February 2012) states a focus on solutions that, "…increase protection for urban areas in the Skagit River delta, with lesser protection for rural areas…". Private property owners and agricultural landowners need to be adequately compensated by contracts executed before any land work associated with this plan is commenced. Any flood mitigation contemplated or implemented must adhere to the Washington State Attorney General's "Advisory Memorandum: Avoiding Unconstitutional Takings of Private Property". In making any flood mitigation choice it is imperative that private property rights be respected. Often that property is the physical manifestation of people's lives, careers, hopes, and dreams. Private property is often the heritage of generations of a person's family lineage.

A major caution is an unwarranted reliance on cost benefit analysis. The most important aspect of an accurate cost benefit analysis is including all the costs and all the benefits and properly quantifying them. Most cost benefit analyses fail when not all costs are included. Furthermore, benefits are often double counted thereby skewing the result and the implications. Too much reliance may be placed on cost benefit analysis because it is human nature to think that a numerical representation is a reflection of accuracy. It isn't. The numerical result in a cost benefit analysis, especially one as complex as flood mitigation projects, is based on many, many highly subjective inputs.

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

WHEN WE FIRST MOVED TO SEDRO-WOOLLEY 21 YEARS AGO WE WERE VERY DILIGENT TO ENSURE WE TOOK AN HISTORIC HOME THAT WAS OUT OF LOCATED IN A FLOOD PLAIN. OUR HOME ARE 100 YEARS OLD AND AS FOR LOADED. NOW WE GO TO BE CONCERNED IF THAT THE US ARMY CORPS OF ENGINEERS PROPOSES CUTS INTO FRUITION WE WILL NEED FLOOD INSURANCE BECAUSE OUR HOME WOULD BE IN SECLUSION OF FLOODING HOW IN GOOD CONSCIOUS CAN YOU POSSIBLY CONSIDER MOVING FORWARD WITH THIS.

* REFER TO FEMA LAWS GOVERNING WORK DONE DOWNSTREAM/RIVER THAT COULD CAUSE UP THE RIVER FLOODING. YOU WOULD BE IN VIOLATION OF YOUR OWN LAWS.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

POST-PROJECT MODELING
PRIVATE CITIZENS CONCERNS & OBJECTIONS

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: MORGAN JR & MRS Affiliation (Optional): _____

Address: 413 TALCOTT ST.

City: SEDRO-WOOLLEY State: WA Zip: 98284

Email: Kim.morgan@frontier.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

JUL 21 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA; 98124

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Remarks, Comments, Concerns

I am glad that Mayor Anderson has an
hand on this discussion.
We are against a wall at the
sewer plant as we live at 832 Alexander
St. and that wall will flow us. We
have been asked to leave (2) times &
the water went up 7½ ft. that was to
close for us. We pay both sewer
& city taxes & pride ourselves in
not asking to have our bills paid
as we could not have money &
replace them if they were lost. Money
they seem to have S.W. and as every
thing & we have a wonderful town
Let's keep it that way."
Thank you Mayor Anderson & Egon Dey. It is always
nice to know what goes on

Lyle & Cindy Nesbitt
832 Alexander St
Sedro-Woolley, WA
98284-1995

US Army Corps of Engineers · Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

we do not want a flow well as we live at 832 Alexander — will not drop the River the fish wells [illegible] back.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Lyle & Beverly Mortsen Affiliation (Optional): none

Address: 832 Alexander St.

City: Sedro-Woolley State: WA Zip: 98284-1949

Email: none

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
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Remarks, Comments, Concerns

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US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Why the river cannot be dredged by the US Army Corp of Engineers and cleaned periodically

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☑ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace army mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
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Ms. Hannah Hadley
U.S. Army Corps of Engineers
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Remarks, Comments, Concerns

I am concerned that it appears Sedro Woolley is being left out of the process

I am extremely concerned that the new home I bought for my wife/child/family may now flood if the levees are changed in Burlington

I am extremely concerned that I may be forced to buy flood insurance, something I when buying my house did not need.

I am extremely concerned that the residents of Sedro Woolley are being sacrificed for the residents of Mount Vernon & Burlington

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Norvel Rogers Jr. Affiliation (Optional): _____

Address: 1242 Fidalgo Place

City: Sedro Woolley State: WA Zip: 98284

Email: loubreaker999@gmail.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I like living in Sedro Woolley without water in my yard every winter. raising the Dikes down river. From Sedro-Woolley will raise Flood levels, and flood our homes. We may also have to buy mandatory Federal Flood Insurance which would Force us to Sell our homes.

US Army Corps of Engineers · Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Norvel E Rogers SR. Affiliation (Optional): _____

Address: 967 Sterling ST.

City: Sedro Woolley State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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JUL 21 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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9612437555

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

My husband and I just moved to the City of Sedro-Woolley 1 year ago - at that time our home was considered to be part of the 500 year flood zone area. Just a few months ago my required flood insurance was dropped by our Lender stating that FEMA had made changes - Where does this put us now??

How is this going to impact my home, my family, my Mortgage. Since when is one town more important than the next?

I FEAR for my home if the City of Sedro-Woolley is left out of these changes. Are you going to pay to Rebuild and Replace for us??

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Who & How is the City of Sedro-Woolley going to Be protected?

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

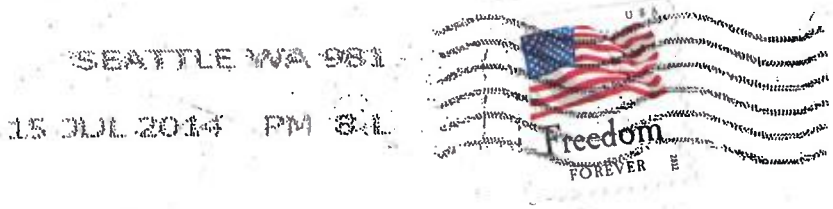
Name: Sandi & Sherwin Phillips Affiliation (Optional): _____

Address: 919 Jameson Street

City: Sedro-Woolley State: WA. Zip: 98284

Email: sandiaphillips@aol.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!



Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

JUL 21 2014

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From: tomplank@juno.com
To: NWS-Skagit-River-GI
Cc: tomplank@juno.com
Subject: [EXTERNAL] Comment on the SRGIS
Date: Monday, July 21, 2014 6:42:10 PM

As a resident/property owner on the south side of Sedro Woolley (Jameson Street) I am deeply concerned about the results and proposal's of the Study. To protect the potentially damaging flooding of two communities and ignore the third is a shameful act.

I would propose that if the Urban Levy Improvement plan occurs: those who suffer flooding in Sedro Woolley should receive payment for their loss and have their flood insurance paid for. A fund could be set aside with taxes collected county wide to compensate these residents. It would be fair to divide the costs of the new levies and the fund three ways between residents of the three cities affected by the 100 year flood.

I can only hope that the burden of flood costs not be laid on those affected by flooding caused by down river levies.

Thomas R. Plank
1005 Jameson St.
Sedro Woolley, Wa 98284
360-766-6569

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I have lived in Sedro Woolley 87 years and have never had to worry about flooding. I am concerned about my property value going down + my insurance going up. Just so Burlington + Mt. Vernon can be spared. I think that the county needs to spend their money on dredging the silt out of the river, making the channel deeper, thus creating colder water for the fish to come in from the Sound. We use to fish the Skagit without worring about all the shallow spots. We had plenty of fish to go around. Raising dikes down river will only creat problems for people up river. Maybe you should consider making dikes all the way up to Concrete. That would only be fair for everyone above Burlington. If my property floods, so will the entire City of Sedro Woolley. They use to dredge this river all the time in the past and never had to worry about flooding.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

Please consider the population up river instead of just Mt. Vernon + Burlington. A lot is at stake.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Patricia Mosher Affiliation (Optional): _____

Address: 1304 Talcott St.

City: Sedro Woolley State: WA Zip: 98284

Email: — don't have a computer

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
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USA
Justice
FOREVER

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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JUL 21 2014

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From:	Leo Jacobs
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River GIS
Date:	Monday, July 21, 2014 4:29:15 PM

Hannah Hadley, U.S> Army Corps of Engineers, skagit.river@usace.army.mil <mailto:skagit.river@usace.army.mil>

Comments, concerns about the Skagit River General Investigation Study: My concern is the lack of different methods to be considered to accomplish more capacity in the river itself. Dredging should be considered in the river. The method has been proven in other parts of the world. If you can allow yourself to look back in history when the Skagit river was getting dredged our fish runs were incredible!! Flooding was less frequent, wood debris and other unwanted stuff were being removed creating a perfect boating river. Even light contaminates were being removed from the river bottom when the materials were being removed. Some of the farmers enjoyed the rich nutrients from the river bottom. We even had a ferry going up our river which if we can dredge again we can open the river to low cost transportation to and from the river towns and cities. I sure hope the great Army Corps can apply common sense and consider this type of approach.

Additional items that should be addressed: We are all in it together why shouldn't all of the jurisdictions participate and be protected together? By allowing one city or dike district to start protecting their own area surely you can understand that another area will be affected. Please have us all work together.

Do I reside in the skagit river basin: Yes

Would I like to be added to your email list: Yes

Name: Nicole Rambow

Address: 1034 East Orange Ave.

City: Burlington

State: WA

Zip: 98273

E-mail: leo.jacobs@frontier.com

Nicole Rambow

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

JUL 2 1 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I am a resident of Sedro Woolley & live on Jameson St & within the 100 year flood zone, I am concerned about the impact of the proposed levee on the Diker in Burlington & how it may affect my & my neighbors homes at certain water levels of the Flood. It would seem to me that the City of Sedro Woolley should be included in the meeting & discussions related to this project. The meeting I attended was excellent & informative but I feel it is totally inadequate & typical USACE heavy handed approach. The corps needs to conduct a full & complete EIS that fully includes the impact of the project on the City of Sedro Woolley & surrounding areas.

US Army Corps of Engineers
Seattle District

John Sedgewick
1011 Jameson St.
Sedro-Woolley
WA 98284

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: John Sedgewick Affiliation (Optional): _____

Address: 1011 Jamieson St

City: Sedro-Woolley, State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement — JUL 2 1 2014

June 6 – July 21, 2014

We want to hear from you!!

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

My concern is we are one of the only businesses in Sedro Woolley that pay taxes on our property. I have lived here for 69 years and I love our small town and do not think because we don't have big box stores here or the wealth that Rental Housing Sedro-Woolley wants to have Burlington and Mt. Vernon is ridiculous. Amy's Bulb Market & Floral Inc. is costly and already has many hard working employees. I think about them and their families. We've been on this planet longer than Costco and others. We are here because we love it. Your priority's are wrong in your thinking.

Sincerely,

Charles

360-333-5505

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: REBA SINES Affiliation (Optional): _____

Address: 920 MAPLE LN. TR. 2

City: SEDRO - WOOLLEY State: WA Zip: 98284

Email: IRONSKILLET@LIVE.COM

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Remarks, Comments, Concerns

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US Army Corps
of Engineers
Seattle District

Skagit River General Investigation Study

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Is there anything additional that should be addressed or considered during this study? Please be specific.

I'm wondering if this will put us on the same position as Hamilton with flooding concerns

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Joanne Swenson Affiliation (Optional): _____

Address: 921 Talcott St.

City: Sedro-Woolley State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace army mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Joanne Swenson
921 Talcott
Sodro Woolley, WA 98284

SEATTLE WA 980
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JUL 21 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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From: Jennifer thramer
To: NWS-Skagit-River-GI
Subject: [EXTERNAL]
Date: Monday, July 21, 2014 6:17:24 PM

Ms. Hadley,

My name is Jennifer Thramer, I am the owner of 1234 Fidalgo Place in Sedro Woolley. It is my understanding that the Comprehensive Urban Levy Improvement plan is basically a plan to force myself, and hundreds of other people to purchase flood insurance because I will be placed in the flood plain by this plan. I didn't buy a house in a flood plain for a reason. Not only that but your plan will make it so my house is harder to sell if I chose to do so.

I feel as a landowner, and a resident of Sedro Woolley, that the USACE owes my City and me a fully researched plan with analysis of both East and West adjustments of the river. My city and the community has been here a lot longer than some of the areas this plan is meant to protect. Those people knew they were in the flood plain. They accepted that risk in purchasing their home. I did not. Nor am I all right with accepting it now.

Why is it acceptable to protect one community over a large portion of a small city? I do not agree with this Urban Levy Improvement Plan.

Sincerely,

Jennifer Thramer

1234 Fidalgo Place

Sedro Woolley, WA 98284

From: david top
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Attention Hannah Hadley
Date: Monday, July 21, 2014 11:19:06 PM

Hi, My name is David Top. I live at 23805 River Rd. Sedro Woolley, Wa. 98284. As you can see I live right next to the Skagit river. My parents own a dairy farm about a mile east. and I grew up on that farm. We have lived through many floods over the years. We understand to what level the water comes up. Our houses and building s are built with that in mind. If the water level comes up higher that it does now, our houses and buildings will be very impacted. If studies informing me that the flood level will rise because new dikes are made are available, I could be informed. But as my city government is informing me, those studies have not been done. So I urge you to inform me what will happen to my property, before any changes are made.

I would like the Skagit river dug out. I see one of the criteria for the work to be done, is " the least environmental impact" I find that unacceptable. I would like to take control of the river and direct it how we want it to run, as well as dig it out so it can flow water as efficiently as possible. To not do that is to say to People, "you are not as important as fish". It is very upsetting to us to see this. Fish have no soul and Humans do. Putting People at risk for flooding is a wicked thing to do. We should do what ever we can to keep the water in the river, and not flooding tax payers land.

My flood insurance policy is going crazy. My brother is a flood insurance agent and has informed me that my policy will likely be close to $2000 a year soon. I can't afford you to raise my flooding risk any more with higher dikes in other areas, but not in mine.

Thank you for including this in your report on this issue. And thank you for your service to our country!

sincerely
David Top

Skagit River General Investigation Study

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June 6 – July 21, 2014

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

This is a great concern to me that a project would even be considered that would only shift the problem from one area to another. Although I have never had a claim filed with FEMA I do not relish the cost of several thousand dollars per year for flood insurance but it will make it very hard to sell these houses which I intend to do over the next few years. I have invested everything into this project and can not afford to have it ripped from me. These properties were not in the flood plain when purchased and would not have been purchased had it been the

Are you going to pay my additional insurance and devaluation? This

must not go forward as planned.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

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June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Full protection for all areas affected by any and all changes made

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: JOHN WRIGHT Affiliation (Optional): _____

Address. P.O. Box 347

City: Sedro-Woolley State: WA. Zip: 98284

Email: pacificcontracting@gmail.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

JUL 21 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

From: Erica Chandler
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] I Oppose!
Date: Tuesday, July 22, 2014 12:25:59 PM

I strongly oppose this plan because it is unjust in its effects on the residents of Sedro-Woolley. I bought my home on Fidalgo Place in Sedro Woolley in late 2010, knowing that I would be far enough from the river to not be required to pay flood insurance or to ever have to worry about my home being ravaged by flood waters. Now I've been made aware of a half-baked plan that would change my situation drastically, along with many other residents that call this lovely town home.

I'm not okay with this plan...it is as if Sedro-Woollley was not so much as an after thought in the development of this "idea". If you back the water up-river by increasing the levy height in Burlington and Mt. Vernon, then you'd better be planning to do it all the way up past Marblemount. Who is going to be the community to suffer here? I will not stand by quietly while this plan is pushed through, resulting in higher insurance costs, more risk of many losing their homes and a complete change in the seasonal landscape in my own home town.

In closing, I'd like to give you my solution. Start dredging the river again and maybe even remove some useless damns and problem solved. More fish and less flooding. Look into it...the science backs it up.

Sincerely,

Erica Chandler

Fidalgo Place
Sedro-Woolley, WA.

Skagit River General Investigation Study

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June 6 – July 21, 2014

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Remarks, Comments, Concerns

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US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Mike Stringfield Affiliation (Optional): _____

Address: 6015 Sennings St

City: Sedro-Woolley State: Wash Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Remarks, Comments, Concerns

I am a long-time resident of Sedro-Woolley Washington. I share the concerns of the City of Sedro-Woolley & support Resolution No. 902014 (attached).

Sincerely,

Roger Anderson

Roger Anderson
1020 Sterling St
Sedro-Woolley WA 98284

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☒ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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RESOLUTION NO. 902-14

A RESOLUTION OF THE CITY OF SEDRO-WOOLLEY, WASHINGTON COMMENTING ON THE DRAFT FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT FOR THE SKAGIT RIVER FLOOD RISK MANAGEMENT GENERAL INVESTIGATION

Whereas, the City of Sedro-Woolley was an active partner in the Corps of Engineers General Investigation of flooding on the Skagit River until recently when the City was no longer included in meetings and discussions about flood reduction alternatives including the process for identifying the Tentatively Selected Plan (TSP), and

Whereas, the original intent of the Skagit River GI Study was to include a comprehensive, system-wide approach to flood risk mitigation which included the City of Sedro-Woolley and was the reason the City of Sedro-Woolley was so engaged in this process and helped fund the local match, and

Whereas, the Draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation that was issued by the U.S. Army Corps Engineers (USACE) and Skagit County in May of this year does not include information that is adequate to allow the City of Sedro-Woolley to understand the consequences of the TSP, and

Whereas, the Draft Environmental Impact Statement (DEIS) does not include a careful analysis of the post-project conditions, and

Whereas, prior studies and analysis has demonstrated that raising the dikes downriver from Sedro-Woolley raises the flood levels within and around the City of Sedro-Woolley to include critical infrastructure, human lives, and real property, and

Whereas, it is not possible for the community in general and the City of Sedro-Woolley in particular to provide meaningful comments on the TSP without the post-project conditions clearly studied, and

Whereas, the City Council of the City of Sedro-Woolley supported the GI Study in an effort to find a Skagit River system wide flood reduction solution rather than a transfer of risk plan from a higher assessed value community to a lower assessed value community,

Now, therefore, be it resolved by the City Council of the City of Sedro-Woolley:

Section 1. The DEIS is inadequate to allow the City and the community to understand the TSP as it fails to provide post-project modeling which is necessary to fully describe the impacts to the people and infrastructure of the City of Sedro-Woolley including

impacts to the environment, economic losses, lives, property, on-going future risk and reductions to quality of life and impact on low-income households who may be at risk of losing their homes as a result of consequential changes to the base flood elevation from the TSP that may trigger mandatory participation in the federal flood insurance program and other intended and unintended consequences.

Section 2. The City Council of the City of Sedro-Woolley has grave concerns about the possible transfer of flood risk from historical and traditional flood prone areas which have been heavily developed in recent decades to areas that developed over a century ago and which have never been at significant risk of flooding as may be possible if the TSP is constructed.

Section 3. The City Council of the City of Sedro-Woolley requests Skagit County and the USACE to fully study the impacts of the TSP on the City of Sedro-Woolley and include the results within the scope of the final environmental impact statement and to further include as part of the finally selected plan all necessary measures to ameliorate the harm to the people, property and infrastructure of Sedro-Woolley that result from the finally selected plan.

Section 4. The City Council requests personal follow-up from Skagit County and USACE regarding these critical issues.

PASSED by majority vote of the members of the Sedro-Woolley City Council this 9th day of July, 2014, and signed in authentication of its passage this 10th day of July, 2014.

Mike Anderson, Mayor

Attest:

Patsy Nelson, Finance Director

Approved as to form:

Eron Berg, City Attorney

From:	Eric Hall
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] June 19 at Skagit Station
Date:	Thursday, July 24, 2014 12:00:23 PM

Hello,

I am Eric Hall and I was present for your presentation on 6/19 in Mount Vernon.

I spoke with an hydrologist who was present and I asked him for his estimate on the increased flood levels at our home at 2519 River Vista Court in Mount Vernon when construction for the Comprehensive Urban Levee Improvement Alternative is completed. I don't remember his name and was hoping you would know and could share that with me please.

Thanks!

Eric
--

Eric Hall
360-445-3105 hm
360-770-5256 cell

360-399-6159 Google Voice

Skagit River General Investigation Study Comment

I would like to take this moment to state that I protest the facts that my local government was no longer invited to the meetings discussions about flood reduction alternatives including the process for identifying the Tentatively Selected Plan. They are my voted representatives and have the right to speak for the people of Sedro-Woolley.

When I purchased my home some 20+ years ago I was aware and concerned about the flood zones and did not want to have to pay for flood insurance. Since the time I have purchased my property, I have watched Burlington and Mount Vernon grow expanding their cities in the flood zone knowing the fact that it was in the flood zone allowing business and resident to build in these zones. These businesses knew they were building in the flood zone and was willing and accepted those risks.

These cities have been reaping the benefits of the sales taxes and property taxes that have been generated for the cities for years. It is these cities that should continue to pay for the risks that they have created not the city of Sedro-Woolley and its citizens.

Creating this new flood zone will greatly impact our community in a negative way. My property value will drop affecting my resale value at a time in which I am closer to retirement and the fact that my home will be in the new flood zone will effect myself financially by requiring me to now have to purchase flood insurance, an add expense that is not in our budget as well as many other residents that will be affected.

With property values dropping creating a hardship to a City in which mostly operates from the property taxes is unacceptable. The City in fact will need increase taxes to expand their emergency services to include flood protection. This potential tax increase would again create additional hardship on my family and the community as a whole.

You need to revisit the plan and work with our elected officials.

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Todd Olson Affiliation (Optional): _____

Address: 821 Talcott St

City: Sedro-Woolley State: WA Zip: 98284

Email: swfd5502@yahoo.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

From:	Dennis Clark
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River GI FR/EIS Comment
Date:	Sunday, July 27, 2014 1:56:21 PM

I am writing to support the preferred alternative of the Skagit River General Investigation, the Comprehensive Urban Levee Improvement (CULI) alternative. I have been following the Skagit River GI since 2011 and previously offered comments on the preliminary alternatives in May 2012.

The information provided in the Draft Feasibility Report and Environmental Impact Statement (FR/EIS) appears to show that the CULI alternative is the most cost-effective and environmentally sound way to achieve the objectives of flood hazard risk reduction while minimizing harmful impacts to the environment.

While I expect there will be some concerns about the implications for rural areas of the CULI alternative, I think that on balance it will better contribute to our county-wide goals of improvements in public safety, environmental protection, and sustainable development by protecting existing urban areas and encouraging further development ("in-fill") in those areas.

I also strongly encourage USACE to retain the so-called "Seattle District Variance" discussed in section 5.7.5.3 of the draft FR/EIS. This variance allows the retention of larger diameter native riparian vegetation on levees, which in turn is critical to the recovery of salmonid species protected under the Endangered Species Act. There is considerable evidence across western Washington that mature native riparian vegetation actually enhances the structural stability of levees and revetments in western Washington. I encourage USACE to consider whether the Seattle District Variance could even be expanded to allow us to "have our fish and levees, too" by allowing still larger diameter vegetation on levees. While discussed only briefly in the draft FR/EIS, the vegetation maintenance requirements under Public Law 84-99 are critical to the long-term sustainability of the Skagit River watershed and should not be jeopardized.

Thank you for your consideration. Thank you for working with our local partners in Skagit County to bring the Skagit River GI to an acceptable conclusion.

Dennis Clark
3805 M Avenue
Anacortes, WA 98221

From:	Konrad Kurp
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] skagit river feasibility study; comment: intensional overflow / dike-break
Date:	Monday, July 28, 2014 7:15:46 PM

---

should an intensional overflow or dike break location be included in this study?
Things don't always go according to plan. Maybe an extra relieve valve for the loaded system might come in handy.
Do we leave this scenario up to chance, because we can not agree on where to locate such a feature?

Konrad Kurp

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

JUL 29 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Just wondering why not either dredge the lower river again or put in an over flow outlet to get rid of the water instead of holding it back?

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

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June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Steve Melssner Affiliation (Optional): _____

Address: 1105 Jamieson St.

City: Sedro Woolley, [redacted] State: Wa Zip: 98284

Email: Lmmsjm@Hotmail.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

This levy "Improvement" plan is as stated a transfer of risk plan that does nothing except transfer higher flood risk from people; commercial as well as residential, who knew their flood risk when they aquired property in the areas involved, to the residents and boisnesses who made their decision for investment on homes and bvisnesses outside of a known flood zone.

I believe that this is not a viable option for flood mitigation due simply to the fact that the potential for decrease in home values increased insurance premiums and not to mention the extreme Damage and inconveniance that a flood would cause for an unknown number of people that had the forethought to not live in a flood zone. Simply put transfering the risk to a less valuable and less developed area is just selfish and irresponsible.

Its like going on a shopping spree and racking up a whole bunch of Debt, and then just deciding that you dont think you should have to pay it back so you pass all your bills for someone else to pay... It doesn't Work that Way.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name Nathan Sanders Affiliation (Optional): _____

Address 629 Jameson St

City. Sedro Woolley State. WA Zip. 98284

Email: NateSanders12@Gmail.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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U.S. Army Corps of Engineers
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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

My wife Brenda and I live on No Central in Sedro-Woolley. Our drainage here depends on the height of the Skagit River and Sedro-Woolley's outfall into the river. We have severe water problems as the water table fluctuates with the height of the river at high water times we have No drainage at all! We have lived here for over 28 yrs and have seen the issue worsen as the water backs up we have been forced to purchase flood insurance.

If Burlington is allowed to raise more dikes you are allowing us to be flooded. Why do you protect the malls that were built in the flood plain and flood home owners. I am a property owner and my wife and I are behind our Mayor's decision to sue in order to protect our home.

James B. Lilley

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
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Is there anything additional that should be addressed or considered during this study? Please be specific.

Do not sacrafice homeowners to protect the Malls in Burlington - they are/were built in the natural relief/flood plain. Who's fault is that? Not ours.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: James B. Tilley Affiliation (Optional): _____

Address: 127 No Central

City: Sedro Woolley State: WA Zip: 98284

Email: jamestilley@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

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Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I fully support Mayor Anderson & the Sedro Woolley City Council's decisions

Also, I worked at Lily Cove Cents on Hwy 20 for 2 yrs & 2 different times due to Rotorded flooding on 2 the roads

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
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Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☐ Yes ☒ No Love Skagit River

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Ron Faccolanopu Affiliation (Optional): _____

Address: 2883 SR 9

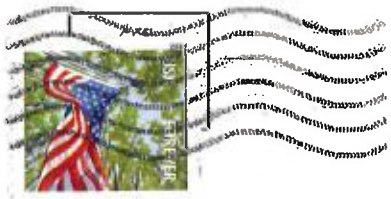
City: Lake Wordly State: WA Zip: 98284

Email: Skf@wavecable.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980

25 JUL 2014 PM 3 L



JUL 3 0 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

Any improvements for protection from floods on the Skagit Valley should be a program that benefits Mt. Vernon, Burlington & Sedro Woolley equally. If not, then nothing should be done & everyone suffers the consequences.

US Army Corps of Engineers · Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Leon Greene Affiliation (Optional): _____

Address: 721 Bennett St.

City: Sedro Woolley State: Wa Zip: 98284

Email: None

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 981
29 JUL 2014 PM 3 T

JUL 3 0 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement

June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I live south of united Gen. Hospital on Sterling Rd in Sedro-Woolley. I was in the flood sint that we lost when it was determined that your neighbor, the government, who ever can do want they want to protect themselves even if it harms you. - The county had been slowly raising the dikes. I flooded in my house in 1990 and raised my house in 1991. The railroad track along highway 20 was ~~not~~ sandbagged then & in 1995 I believe. I have long thought that the water will never get higher than it has been at its worst here, because it will go over the railroad track then.

I was appalled to hear that your plan may back water up into lower Sedro Woolley streets. Poor planning allows Malls, businesses etc to build in the flood plane then they get protection at other peoples expense! Outrageous

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Global warming is reducing glacier size, Will that play a part in high water? Are winter snow packs reducing?

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☑ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Louise A. Harris Affiliation (Optional): _____

Address: 11115 Sterling Rd

City: Sedro-Woolley State: WA Zip: 98284

Email: lharris848@comcast.net

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace army mil or at (206) 764-3950 Comments must be received no later than July 21, 2014. Thank you!

Louise A. Harris
11115 Sterling Rd.
Sedro Woolley, WA 98284

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement

June 6 – July 21, 2014

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Please take the time to provide your comments. You can submit your comments by:

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- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I am totally against a dike in Burlington & mt. Vernon, no way kiss parts of Woolley if this would happen. Listen to the old timers and hear what they have to say - they are against this plan. My 88 year old father remembers all the floods. If you raise the dike my old neighborhood would flood - Plaza View Drive.

US Army Corps of Engineers
Seattle District

SKAGIT COUNTY WASHINGTON

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☒ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name Brenda Kindas Affiliation (Optional): _____

Address: 961 Sterling St.

City Sedro Woolley State: WA Zip: 98284

Email sheera517@yahoo.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

SEATTLE WA 980
19 JUL 2014 PM 7 L

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

JUL 3 1 2014

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9812437555S

From:	Debbie Cornish
To:	NWS-Skagit-River-GI
Cc:	kwagoner@ci.sedro-woolley.wa.us
Subject:	[EXTERNAL] Skagit River Investigation Study Comment
Date:	Thursday, July 31, 2014 7:45:08 PM

To whom it may concern,
I would like to comment regarding the Skagit River Investigation Study. I am a resident of Sedro Woolley as are my family members. We live in the area that would be affected by the proposed levees. This proposal makes me feel as if the residents of Sedro Woolley are considered of lesser importance than the urban improvements made in Mt. Vernon and Burlington. When I bought my home, I did so knowing that it was not in the flood plain. My family, that resides closer to the river has lived in their home for over 45 years. They too bought their home knowing that they were not in the flood plain. The fact that the county is concerned about protecting businesses instead of residents is appalling. Thanks so much for proposing to protect out sewage treatment plant and hospital. Meaning you don't want our pollution, but would leave our hospital to treat the injured. How thoughtful of you.
Does the county also propose that they would compensate us for our loss of property value and pay our flood insurance?
I ask you to consider the residents of Sedro Woolley and all residents up-river of this project. Anyone that built in the flood plain that this would benefit did so knowingly and should not be given precedence over residents that have been established as mine, for almost 100 years.

I would like to be added to the Skagit River General Investigation Study mailing list:
Debbie Cornish
1002 Township Street
Sedro Woolley, WA 98284
email: dcorn18@gmail.com

Thank you for your consideration
Sincerely,
Debbie Cornish

From: Ellyson-Billman, Marcia
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Skagit River General investigation Study
Date: Friday, August 01, 2014 11:26:35 AM

As a resident of Sedro Woolley I am VERY concerned about the Draft Feasibility Report and Environmental Impact Statement for the Skagit River General Investigation Study. The study seems to have failed at considering results to Sedro Woolley while protecting Burlington and Mount Vernon. I hope that you will again review The Comprehensive Urben Levy Improvement Plan with flood danger to Sedro Woolley. Honestly, I am surprised that

this would even be an issue. It makes me think that whoever did the study had one eye closed. That's not a good thing when talking about a government agency. Please consider Sedro Woolley's concern and redo this

impact statement with the lives and homes of 10,540 est pop in consideration. Thank you Marcia Billman (and I live smack in the middle of someone who would experience flooding should this impact statement be enforced as it is)

From:	Sherry Lynch
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River GI Study
Date:	Friday, August 01, 2014 10:14:00 AM

Hannah Hadley,
Please include my comment and questions into the record in response to the review of draft Feasibility Study & Environmental Impact Statement.

Increasing the height of current levies in order to minimize flood risk to the city of Burlington at the expense of the city of Sedro-Woolley and its residents is not an acceptable plan. Within the affected area of concern(south side of State St), are two elementary and one senior high schools, a dementia facility and the cities waste water treatment facility.

Why should property owners be forced into a newly designated flood zone and then be forced into purchasing Federal Flood Insurance in an area that has not been flood prone in the past?

Sacrificing a community just because it has a lower assessed value is not acceptable when there are other options available. How about cleaning up some of the "added" materials that have been "temporarily" been placed into the river over the past years? How long is "temporarily"?

Please reconsider this plan option until a more complete study of the impact it will have on the city of Sedro-Woolley, its residents, as well as those impacted within the Samish River Basin can be completed.

Thank You, Sherry Lynch
Sedro-Woolley resident

SKAGIT CLIMATE SCIENCE CONSORTIUM

July 30, 2014

Hannah Hadley
U.S. Army Corps of Engineers
CEN-WS-EN-ER
P.O. Box 3755
Seattle, WA 98124-2755

Subject: Skagit Climate Science Consortium (SC^2) Comments on the Draft Feasibility Report and Environmental Impact Statement for the Skagit General Investigation

Thank you for this opportunity to review and comment on the Draft Feasibility Report and Environmental Impact Statement for the Skagit General Investigation. Addressing the significant flood risk in the Skagit Valley is an endeavor of the utmost importance, which is only made the more critical by our understanding of how climate change will increase this already significant threat. The Skagit Climate Science Consortium (SC^2) is a 501 c (3) nonprofit comprised of scientists working with local people to assess, plan, and adapt to climate related impacts in the Skagit Valley. SC^2 member research scientists come from federal, municipal, tribal, and university organizations and bring expertise in hydrology, engineering, geomorphology, estuarine ecology, fisheries biology, forestry, climate science, oceanography, and coastal geology.

In our collective view, the Draft Feasibility Report and Environmental Impact Statement (DFREIS) associated with the Skagit General Investigation (GI) does not meet the basic requirement of due diligence in analyzing proposed engineering alternatives and their environmental impacts. The following letter seeks to convey and document why the scientists participating in SC^2 and signatories to this letter have come to this conclusion.

The time frame of the analysis for the GI is 2020-2070, a time period when risk is expected to grow due to increasing development in the Skagit floodplain and climate change (Hamlet et al. 2010, 2013; Lee et al. 2011, 2014; Tohver et al. 2014). Three issues related to the incorporation of climate change in the DFREIS stand out as most crucial:

1. The DREIS does not quantify the performance and environmental impacts of the proposed alternatives for projected changes in future conditions that will result from climate change,
2. The DFREIS does not adequately evaluate impacts to ecosystems resulting from the proposed alternatives in conjunction with anticipated climate related changes, and
3. The DFREIS does not include relevant and recent literature, including information that presents alternative viewpoints, or disagrees with study assumptions.

Potential changes in flood risk have a direct and unambiguous bearing on the management objectives investigated in the study. Just as future population estimates are commonly incorporated in water planning studies affected by changing water demand, the GI needs to incorporate climate change as a fundamental element of the analysis affecting the defined planning horizon. Unless climate change impact pathways are included, it is unclear whether the preferred alternative will perform adequately in achieving the fundamental management objective encompassed by the study (reductions in flood risk), or whether the selection of this alternative as the preferred one is robust in the face of conditions that are already changing.

In the past 50 years, glacial cover in the Skagit Basin declined 19% (Dick, 2013), the mean Nov-April freezing level has risen approximately 600 ft. since 1949 (http://www.wrcc.dri.edu/cwd/products/), the mean annual flood has increased in the

unregulated portions of the basin (Sauk River, USGS gauge #12189500, http://waterdata.usgs.gov), and colder parts of the watershed are accumulating less snow in winter, resulting in a shift from a spring- to a fall-dominant flood regime (e.g. in the Sauk River). These changes affect current baseline conditions and are likely to have profound impacts on the performance of specific alternatives (including the no action alternative) during the stated GI planning period.

The Skagit GI has a Tentatively Selected Plan (TSP) projected to cost $225 million dollars plus $800,000 annually for Baker Dam operations. An expenditure of this magnitude will likely be the most significant, if not the only effort of its kind for many decades, and presents an important and unique opportunity for the valley to prepare for flooding exacerbated by climate change. Furthermore, if the changes identified in the TSP ultimately prove to be inadequate in coping with future flood risks, it is questionable that the region will be able to secure the resources to conduct additional analysis or make expensive, time-consuming changes or improvements to recent infrastructure investments of this scale. Proposed alternatives put forward as part of the GI need to be explicitly and thoroughly tested under the conditions they will likely encounter, including climate change (increasing peak flows, increasing sediment loads, and sea level rise). The U.S. Army Corps of Engineers' cursory, and largely qualitative method of analysis of climate change impacts raises a number of fundamental questions and concerns regarding study outcomes:

1. Do the proposed study alternatives meet fundamental objectives related to reducing flood risk if floods increase in magnitude as projected?
2. Is the current TSP a robust choice when climate change impacts are considered in the analysis?
3. Will other elements of the existing flood control infrastructure (e.g. the Mt. Vernon flood wall and other portions of the existing levee system) perform

adequately with the combination of stronger levees in the lower basin and increasing flood frequency and magnitude?

4. What are the environmental impacts in the lower Skagit River channel, delta, and estuary when increasing peak flows and increasing sediment loads are combined with the preferred alternative of an increasingly channelized river system?
5. Given the interaction between sea levels and surface-groundwater in the Skagit Delta, what are surface-groundwater interactions currently and under projected sea level rise scenarios? How will study alternatives be influenced by and themselves influence groundwater levels that strongly affect flooding, drainage and drainage maintenance costs, and agricultural production?

In addition to the limitations discussed above, the DFREIS frequently presents information about climate change in a confusing and inconsistent manner. For example, in a footnote, the plan dismisses most potential impacts of climate change due to uncertainty in climate model projections; yet, on page 87 the plan states, "The Earth's atmosphere is changing, the climate system is warming." Similarly, while the current draft of the DFREIS makes qualitative use of current scientific information on climate change (primarily in Sections 4 and 5) to identify potential impact pathways and speculate on potential outcomes related to different alternatives, the study does not make appropriate use of well-established vulnerability assessment practices used by federal, state, and local agencies such as the U.S. Bureau of Reclamation, Bonneville Power Administration, Northwest Power and Conservation Council, U.S. Fish and Wildlife, U.S. Park Service, U.S. Forest Service, WA State Department of Ecology, Seattle Public Utilities, and Seattle City Light to prepare for climate change. Some recent examples of high-visibility planning studies in the Pacific Northwest that incorporate climate change include:

- The Columbia River Basin Climate Impacts Assessment

(http://www.usbr.gov/pn/climate/crbia/index.html);

- River Management Joint Operating Committee studies in the Columbia River Basin (http://www.usbr.gov/pn/climate/planning/reports/index.html); and
- The Stehekin River Corridor Implementation Plan (National Park Service, 2013).

The U.S. Army Corps of Engineers (USACE) has been a central participant in several studies focused on climate change impacts on flooding in the Columbia River Basin, which makes the omission of climate change impacts in the Skagit DFREIS all the more noteworthy.

A number of key published analyses have been omitted from the current DFREIS that would help to quantify future flood risk and identify viable, cost-effective solutions to changing conditions. These peer-reviewed papers and reports are cited in context below and listed at the end of the attachment. Scientists from SC^2 presented much of this information to the USACE and other stakeholders at a public workshop in 2012, a meeting at the Seattle District office with the GI team in June 2013, and an open house in April 2014. A thorough and well-designed initial study on the effects of sea level rise, storm surge, and increased flood risk (Hamman, 2012) was provided to the USACE, but it appears not to have been utilized in the DFREIS. By design, this study used the same hydrodynamic model developed and used by Federal Emergency Management Agency (FEMA) and USACE in previous studies. Through these past communications, SC^2 scientists have repeatedly highlighted three main climate change impact pathways that increase flood risk in the Skagit valley: increasing peak flows, increasing sediment load, and sea level rise. These are discussed in more detail below.

Increasing Peak Flows

The magnitude of Skagit River floods is projected to increase dramatically as a result of climate change due to rising freezing levels, changing snowpack and soil moisture

Skagit River is likely to increase in elevation more rapidly than it has in the past because of the accelerated rate of future sea level rise. Observations of river morphology also highlight important changes in channel elevation. Preliminary cross-section elevation data collected in late 2012 by the USGS indicate that significant aggradation in select reaches, including at Mount Vernon, has occurred with up to 10 feet of sediment deposition since the last survey conducted for the GI in 1999. This observed increase in river bed elevation is expected to decrease the effectiveness of existing or proposed levees. This information was shared with the USACE at a July 2013 meeting, but apparently was not considered in the DFREIS.

The DFREIS suggests sediment deposition is expected between river miles 18-22, where the bed material changes from gravel to sand. We recommend that the USACE use quantitative estimates, either from the literature or via modeling, to identify the likely extent of the issue between river miles 18 and 22 and other areas where channel capacity and flood conveyance will be reduced. Model estimates should include dynamic updating of geomorphology over time based on sedimentation and erosion patterns.

It has long been known that the use of levees and other flow control structures influence sediment transport downstream, which can have significant impacts to important habitats that support ecosystems and valued species. For example, much has been learned from the Mississippi Delta (Alexander et al. 2012). The DFREIS should include an assessment of how climate change impacts will interact with the different alternatives to affect Tribal, State, and other Puget Sound recovery goals. For example, achieving no net loss of habitat and reaching the Puget Sound Partnership's 2020 goal of increasing eelgrass habitat may be affected when climate change impacts are considered along with the alternatives or TSP. Grossman et al. (2011) shows the extent that the Skagit Delta and tidal flats have been transformed from a calm, mud dominated

environment to an energetic, sandy tidal flat in response to the emplacement of the Skagit River levees and their influence on focusing flow and sediment to Skagit Bay. The result of stream flow rerouting and focusing has caused chronic sediment disturbance through sediment abrasion and bypassing that fragments important eelgrass beds. These changes can adversely impact forage fish like herring that use eelgrass for spawning substrate, Chinook and other salmon that use eelgrass during nearshore residency, and benthic fauna that are food resources for many fish and birds. Changes in sediment export from river deltas due to flow rerouting can also affect shellfish. These types of impacts directly influence the Puget Sound Partnership's and NOAA's salmon recovery targets; therefore, they should be evaluated for each proposed GI alternative in the context of projected climate change in order to comprehensively assess their costs and benefits.

Sea Level Rise

The DFREIS does not adequately take into account the effects of sea level rise. Three important influences on flooding related to sea-level rise should be considered: (1) The full range of projected sea level rise, (2) Recent changes in tidal channel bathymetry, and (3) Estuarine mixing, which affects the sedimentation rate and distribution.

The selection of the low, medium, and high sea level positions used for the DFREIS sea level rise impact analyses does not reflect the best available science which shows a higher range of projections and a maximum projected sea level position greater than that used by USACE. For example, three resources available include:

1. The National Academy of Sciences 2012 report titled "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future" that projects sea level positions along the *uplifting* outer Washington Coast (available at: http://www.nap.edu/catalog.php?record_id=13389),
2. The Mote et al. (2008) report titled "Sea Level Rise in the Coastal Waters of Washington State" which estimates future sea level positions within the

subsiding regions of Puget Sound by Mote et al. 2008 (available at: http://www.cses.washington.edu/db/pdf/moteetalslr579.pdf); and

3. The NOAA Seattle Tide gage 9447130 (available at: http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=9447130)

The science of sea level rise is rapidly changing. Recent projections of sea level rise published by the National Academy of Sciences (2012), for example, are substantially higher than those published by Mote et al. (2008), which were based on the 2007 IPCC projections. Different studies also use different rates of vertical land movement, which is a source of potential confusion. The National Academy of Sciences report, for example, assumed that Puget Sound is experiencing the same rate of uplift as the Pacific Coast, whereas Mote et al. (2008) attempted to account for the lower rates of vertical land movement for Puget Sound.

The NOAA Seattle tide gage contains one of the longest records of sea level rise along the US West Coast. It records a rate of sea level rise of 2.06±0.17 millimeters per year. The National Academy of Sciences (NAS) 2012 assessment suggests two upper values for future sea level positions at 2030, 2050, and 2100 that reflect a mean and a maximum scenario. The mean for 2050 and 2100 are 0.54 feet and 2.03 feet respectively, and the maximum for 2050 and 2100 are 1.57 feet and 4.70 feet respectively. (All values are relative to sea level in the year 2000.) A linear interpolation between the 2050 and 2100 maximum estimates for the year 2070 would result in a value of 3.78 feet, substantially higher than the 2.15 feet used in the DFREIS analyses. Two caveats with this approach, however, are that (1) the NAS 2012 estimates are for the outer Washington coast which is known to be uplifting and are thought to under predict rates of relative sea level rise within Puget Sound and Whidbey Basin, and (2) the rate of sea level rise between present and 2100 is expected to rise exponentially, not linearly, so interpolations of the NAS 2012 results for the year 2070 within Puget Sound and Whidbey Basin are likely to underestimate future sea level. Other NOAA tide

gauges in the area including Port Townsend also indicate similar rates of sea level rise.

The Mote et al. 2008 report considered vertical land movements within Puget Sound and Whidbey Basin more comprehensively than the National Academy of Sciences' 2012 report. The Mote et al. 2008 report proposes three estimates (very low, medium and very high) for future sea level rise at 2050 and 2100. A linear interpolation between the 2050 and 2100 very high estimates for the year 2070 would result in a value of 2.76 feet, again higher than the selected 2.15 feet used in the DFREIS analyses. As above, using a linear interpolation for future sea level position likely underestimates the risk as the rate of sea level rise is expected to rise exponentially.

The future influence of sea level rise and tidal inundation depends strongly on the stream channel bathymetry and hydraulic gradient. A slight change, even at the scale of several inches, in sea level rise can have a strong effect on inundation in low-sloping areas. The DFREIS uses bathymetry data from 1999. As noted earlier in this letter, updated USGS information from 2012 shows significant changes including up to 10 feet of sedimentation in select reaches of the lower Skagit Valley and near Mount Vernon. Such geomorphic changes since 1999 likely affect any hydrodynamic model results and the ability to simulate future influences of sea level rise in a spatially explicit way to inform flood hazards along the Skagit River. Current and improved bathymetry data should be included in the DFREIS modeling.

Finally, flocculation within the estuarine mixing zone is an important factor governing sedimentation. The interaction of rising sea level and changing flows, (including lower summer low flows), will enable greater tidal inundation thus influencing sediment deposition rates. These interactions are critical and should be included in any assessment of future sedimentation to adequately assess future flood risk.

The remainder of our comments, provided as appendices, focus on specific sections of the DRFEIS and are listed in the attached document by section number in the DFREIS. Also included in the attached document are the full citations for those referenced in this letter. We also invite you to review our website at: http://www.skagitclimatescience.org, which has graphs, charts and additional information on climate change and flood risk in the Skagit Valley.

We appreciate the opportunity to provide our comments, and we hope that we will be able to work in partnership with the USACE and other local partners to prepare for climate change in the Skagit basin by better incorporating climate information in the General Investigation. We would be happy to discuss our conclusions in more detail or provide additional information as needed. For questions or follow-up, please contact Dr. Alan F. Hamlet (email hamlet.1@nd.edu, phone: 574-631-7409), or Carol Macilroy (email: cmacilroy@gmail.com, phone: 206.293.4741).

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"Any opinions, findings, or conclusions expressed in this letter are those of the authors and do not necessarily reflect the views of the organizations or agencies with which they are affiliated or employed."

Skagit Climate Science Consortium Specific DFREIS Comments

Section 2.4

The problem statement should make mention of potentially increasing flood frequency and magnitude due to climate change that may overwhelm existing infrastructure and/or "flood fighting" practices, resulting in increased impacts to infrastructure and/or public safety. Likewise, because climate change adaptation strategies are already needed in the basin to cope with non-stationary flood statistics, this study presents an opportunity to not only mitigate the impact of "normal" 19th and 20th-century floods, but also to plan for and mitigate potentially higher flood risks in the future.

There is an important distinction to be made between the current problem statement on page 10 and those problems that emerge when attempting to mitigate a future with larger and more frequent floods. First, the proposed infrastructure alternatives need to be tested for feasibility and performance under an altered flood regime because they may be damaged or otherwise perform inadequately during larger floods. Second, the economic analysis identifying the least expensive alternative may be quite sensitive to changes in the risk of flooding due to the cost of more frequent repairs to the proposed infrastructure. This is not considered in the current economic analysis. In other words, infrastructure that appears to be the most cost effective for mitigating 19th and 20th century floods may not be the most cost effective means for dealing with 21st century flooding if flood risks increase as projected.

Increases in sediment transport projected to accompany increased peak flows in the future are also a concern, particularly for alternatives that use relatively narrow river channels with levees as the primary means of flood mitigation. In addition to the broader impacts on the estuary and delta discussed in the letter, increases in sediment loading could result in increased erosion pressure on the levee system, adverse changes on the bay front, and negative consequences to fish.

Section 3.1.1

The statement that Ross Dam provided incidental flood regulation between 1920 and 1950 is incorrect. Construction on Ross Dam was not initiated until 1937, and the dam was not completed until 1949. The reservoir was filled to a lower level in 1953, and reached its present maximum pool elevation in 1967.

Section 3.2

This section omits a number of climate change risks that will likely occur over the next 50 years. Specific concerns related to the lack of adequate treatment of climate change issues are discussed in more detail elsewhere in this letter.

Section 3.2.1

The DFREIS states "Hydrologic and geomorphic conditions in the upper Skagit River Basin are not expected to change significantly over the next 50 years." (pg 39)

This statement is directly at odds with the current scientific research and modeling from published studies. Specifically:

- Expected increases in flood flows (Hamlet et al. 2010, 2013; Lee et al. 2011, 2014; Mantua 2010; Tohver et al. 2014; Salathé et al. 2014). For example, current estimates project that the 5% ACE (the extent of current flood protection in the Skagit) will become a 30% ACE (e.g., the 20-year event will become a 3-year event) on average by the final decades of this century (2070-2099 relative to 1970-1999; results are similar for 2070).
- Expected increases in sea level. This is discussed in Section 4 of the report, though low/intermediate estimates are not consistent with published estimates (e.g., NRC 2012).

- Expected increases in fluvial suspended sediment transport. Sediment transport is projected to increase by a factor of 2-6 relative to 2010 levels by 2100, based on a recently refined sediment rating curve for the Skagit at Mount Vernon (Lee et al. 2014).
- Loss of 19% of the Skagit watershed's glaciers since the late 1950s (Dick, 2013).

A footnote in the DFREIS claims that climate change effects are uncertain and therefore have been excluded from the analysis. Estimates of the historical 100-year flood, future population, and land-use projections are also uncertain; yet, we include them, cognizant of their limitations, in studies like this one because they are an important driver of impacts. The same can be said for climate change impacts to peak flows. Sea level rise projections are also uncertain, and for the Skagit include uncertainties regarding rate of vertical land movements, which are widely considered to be trending downward in the Skagit lowlands (e.g. land subsidence; NAS 2012; Mote et al. 2008; http://www.panga.cwu.edu/demo_vms/velo_map.html). Despite uncertainties, these impacts must be included in studies of this kind because of their impact on study outcomes. SC^2 has shared these results and associated datum, which include quantitative estimates of uncertainty, with USACE including simulations from hydrologic models, sediment yield, and GIS analyses; yet, these resources do not appear to have been used in support of the DFREIS.

The analysis does not have sufficient scope, as it focuses only on sea level rise and not on hydrologic changes, nor the dynamic interaction of sedimentation on bed elevations through time, which affect flood conveyance and ecosystem impacts. Furthermore, initial modeling studies that incorporate hydrologic changes (Hamman 2012) have demonstrated that changes in river flooding are likely the most important driver leading to increased depth of inundation in the lower basin under climate change scenarios, once again highlighting the need to address these factors in long-term planning.

Section 4.1

Groundwater levels strongly affect flooding, drainage and drainage maintenance costs, and agricultural production. Given the interaction between sea level and surface-groundwater interactions in the Skagit Delta, what are surface-groundwater interactions currently and under projected sea level rise scenarios? How will the alternatives be influenced by, and themselves influence, groundwater levels? How are these considerations accounted for in the alternative benefits and cost comparisons, particularly in maintenance and operational costs related to pumping ponded water off of lands and to a higher sea?

A recent report shows that the groundwater table beneath farmland in the lower Skagit flats west of Mount Vernon is strongly influenced by present tidal variation and water surface elevations of the Skagit River (Savoca et al. 2009). This would suggest that future groundwater levels associated with changes in river stage and sea level position would be required to assess flooding, surface ponding, and the feasibility and performance of any alternatives intended to reduce hazards or economic impacts to farmers in the Skagit floodplain.

Sections 4.1.4 and 4.1.5

Levee setbacks in the lower river and upper delta, when designed to improve fish habitat, provide low-velocity rearing habitats that are currently very rare in the lower Skagit River as a consequence of an extensive levee and dike system. Low-velocity areas that possess complex large woody debris and riparian cover are critical to the growth and survival of juvenile Chinook salmon in the lower Skagit. These areas also provide important rearing habitat for juvenile steelhead and coho and important foraging habitat for anadromous bull trout. The scarcity of rearing and flood refuge habitats in the lower Skagit is currently a major factor limiting the production of all six

independent Chinook salmon populations in the Skagit Basin (Skagit Chinook Recovery Plan 2005; Skagit Watershed Council Strategic Approach 2010). Rearing and refuge habitat become even more important in light of climate change, because these areas will become critical to the survival of juvenile salmonids as sea level rise and flood events become more frequent and extreme over time. Habitat mitigation and restoration measures should be considered for all alternatives that not only maintain current habitat but also "storm-proof" juvenile salmonids from further increases in sea level rise and peak flows resulting from climate change. Such measures may be critical to ensuring the long-term persistence of ESA-listed fish in the Skagit Watershed.

Table 4.3· Environmental Consequences of Alternatives

The DFREIS analysis of sedimentary processes and their effects on tidal marsh persistence is frequently based on incorrect or questionable assumptions. It also inaccurately characterizes current conditions and trends and does not appropriately account for the complexity of the system. For example, the statement that "Islands and marsh areas should continue to grow at near current rates [at the North and South Fork mouths]…", is at odds with observations of steadily declining marsh progradation rates since 1937 and recent tidal marsh erosion (Hood 2012, Hood et al. 2014). Another example is the over simplified statement that "Under the climate change scenario, higher discharges would likely result in higher sediment yields. …higher sediment yields would likely cause increased deposition around the mouths of the North and South Forks." In fact, large proportions of the river's sediment load likely bypass the tidal marshes as a result of high plume momentum caused by river constriction through the construction of levees and the elimination of historical river distributaries across Fir Island and elsewhere in the delta (cf. Falcini et al. 2012). Furthermore, both of these statements appear to focus on marsh progradation, which is declining and reversing, while the importance of marsh aggradation to counteract sea-level rise is not included. The effect of project structure on sediment routing, and consequently marsh aggradation, appears to not be included at all. The proximity of levees to the river

(setback versus not setback) and the presence of distributaries or bypasses will affect the momentum of the river plume, and thereby affect retention of suspended sediments in tidal marshes and consequently marsh aggradation and progradation. Consideration of the project structure (including all alternatives) on sediment routing in the delta, and consequently on tidal marsh persistence, under future accelerated sea-level rise appears to be cursory and lack the rigor necessary in evaluating alternatives and their potential impacts and consequences.

With sea level rise, the area within the estuary and extent of flocculation of fine particles contributing to sedimentation does not seem to have been considered. Table 4.3 provides a summary of environmental consequences (both positive and negative impacts) for each of the alternative actions. For the most part, this table focuses on negative impacts. For the Joe Leary Slough Bypass alternative, this table fails to list potential positive impacts with regards to Geomorphology and Sediment Transport (4.6) and Aquatic Habitat (4.13), and only lists potential negative impacts. An example of a potential positive impact would include increased sedimentation to Padilla Bay, which has been shown to be cut off from its historic source of sediments (the Skagit River) and is currently eroding. Combined with sea level rise, this loss of sediments and its impacts on habitat and aquatic species is an important impact pathway. Additional sediments (when the bypass is operational) could potentially compensate for both increasing rates of sea level rise and for current loss of sediments (Kairis and Rybczyk 2010). Yet, these are not noted as potentially positive impacts.

Potential benefits for Padilla Bay with the Joe Leary Slough Bypass Alternative are not addressed. Given that Padilla Bay has been shown to be subsiding (Kairis and Rybczyk 2010), additional sediment from the bypass could help maintain the Bay's current elevation, thus preventing water depths that are too deep to sustain eelgrass.

Despite statements to the contrary in this section of the DFREIS, there is extensive literature that suggests pulsing events (e.g. sediment transport during large floods) are critical to many wetland and aquatic habitats for maintaining elevation (Day et al. 2000, McKee et al. 2009, Rybczyk and Cahoon 2002). These factors have not been adequately considered in the assessment of alternatives.

Section 4.15.1.1

Projected increases in flood magnitude and frequency have many implications for most fish species in the Skagit, adding to cumulative impacts from increasingly intense summer low flows and increased water temperatures (Mantua et al. 2010). For example, there are several juvenile life history forms of Chinook in the Skagit, the most important being estuary/freshwater tidal delta and riverine (parr migrant) forms, both of which migrate out as subyearlings; a stream-type life history form, which migrate out as yearlings; and fry migrant life history forms that use pocket estuary habitat (SRSC and WDFW 2005). All of these life history forms are important to the abundance, productivity, and diversity of the six independent Chinook salmon populations in the Skagit River watershed (NWFSC 2006), and also to the recovery of the entire Evolutionarily Significant Unit for ESA delisting (Ruckelshaus et. al 2006). The estuary/freshwater delta rearing area generally includes the North and South Fork Skagit downstream of the forks at Mt Vernon, Skagit Bay, Swinomish Channel, and Padilla bay.

Peak flows have a major impact on the survival of Chinook salmon eggs and fry, and the abundance of outmigrating smolts in the Skagit River basin (Kinsel et al. 2007). Consequently, increasing peak flows in the project area caused by climate change would adversely impact all of these Chinook life history forms. The predicted increases in velocities under a 1% ACE flood under the CULI Alternative may seem small, but velocities will still be much too high for juvenile fish throughout the lower Skagit

because of the lack of suitable velocity refuge habitat. Also, high-flow events that cause significant impacts are projected to become much more frequent in future scenarios (Mantua et al. 2010). Egg-to-smolt *survival* rates for juvenile Chinook in the Skagit are less than 1% during a 1% ACE flood (WDFW smolt trapping data) as a consequence of redd scouring and fry mortality due to high velocities. Survival rates will decline even further under the more frequent high flows predicted under climate change. Ocean-type Chinook fry are also present in the river during the winter, (Chinook fry are present in the river typically after mid-January following redd emergence.), and these fry are especially vulnerable to high flows.

The various alternatives presented in the DFREIS can help reduce cumulative impacts (particularly for yearling fish) if designed to provide refuge habitat during flood events. Unless rearing and flood refuge habitat are protected and restored in the lower Skagit River, all of these life history forms will likely decline as a result of changes in hydrological patterns caused by climate change.

Section 4.2.1.3

The analysis of cumulative impacts to fish due to bank hardening would benefit greatly if alternatives including extensive use of rip rap (e.g.170,000 cubic yards) were compared to existing conditions in terms of added lineage of hardened bank (e.g. in addition to 60% currently modified below Sedro-Woolley).

Section 4.9.1

It would probably be more accurate to call subsurface material "sediment" than "soil" in discussion of borings. Why was the presence of woody debris not mentioned in borings? Would the presence of the wood not compromise levee stability?

Soils have been mapped in the upper basin within North Cascades National Park.

Due to projected changes associated with a warming climate, it is important to know where the most valuable soil types are in terms of water storage, groundwater recharge, and water temperature mitigation, and how these natural resources are affected by the alternatives evaluated in the DFREIS.

Section 6.17

Skagit Wild and Scenic River officially starts at Bacon Creek – not Ross Dam. The area between Ross Dam and Bacon Creek is suitable, but Congress has not acted to include it in the system.

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Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

We are extre concerned about the TSP. We have not been in the flood plain but under this plan, we are at grave risk. Our beautiful home was built in 1902 + has been on the city's historic Christmas tour. It was here BEFORE Burlington became a retail center.

We bou[illegible] a home that wasnt in a flood zone on purpose. We do not want to have to buy federal flood insurance. It would cost us $200 more per month. That money we need to meet our family t.

Please re-think this TSP – there has to be a better way.

Sincerely,

Rochelle Pettis

Jim Pettis

US Army Corps of Engineers · Seattle District

518 Warner, Sedro-Woolley

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Dont sacrifice one town for another.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Jim and Rochelle Pittis Affiliation (Optional): homeowner

Address: 518 Warner St

City: Sedro Woolley State: WA Zip: 98284

Email: pittisfam@yahoo.com

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

DEADLINE FOR PUBLIC COMMENTS EXTENDED to August 5, 2014

Affix Postage Here

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

From:	Brett Sandstrom
To:	NWS-Skagit-River-GI
Cc:	Eron Berg
Subject:	[EXTERNAL] Skagit River GIS Comment
Date:	Sunday, August 03, 2014 10:04:52 PM

August 1st, 2014

U.S. Army Corps of Engineers
C/O Hannah Hadley

It is reprehensible and immoral to endanger one person over another. Sedro-Woolley has a long, flood-free existence; my house has been standing strong and dry for over one-hundred and twenty-two years. These possible flood control measures on the Skagit River will have negative impacts on me, my family, and my neighbors, including three school zones – Mary Purcell and Central Elementary Schools, and Sedro-Woolley High School.

The City of Sedro-Woolley has, in good faith and in a cooperative manner, contributed to the flood control process here in Skagit County, and we demand that our concerns are address and solutions found before any projects are completed.

We demand that any project shows the true affect on all the residents of the City of Sedro-Woolley; the studies must be done.

We demand that any project shows the true affect on the schools located in the newly affected area; when the full studies are completed.

We demand that the flood control projects take in consideration population of a city over assessed value.

We demand the same protection against flooding that the downriver cities will benefit from.

In Sincere Faith You'll Do The Right Thing For The City of Sedro-Woolley,

Brett C Sandström
Darcy R Resetar
Arlis U Sandström-Resetar (6)
Ogden GA Sandström-Resetar (3)
432 Talcott Street
Sedro-Woolley, WA 98284
(360)855-1095

From:	mike anderson
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Fw:
Date:	Monday, August 04, 2014 12:48:48 PM

8/4/2014
Hannah Hadley,

I am voicing my concern against transferring of flood risk to my property a 21241 Lafayette, Sedro-Woolley. My husband and I have owned this house since 1983 and have experienced a few floods. We raised the house with money out of our pocket after the 1995 flood to be one foot above flood stage per Army Corp and above the railroad tracks to the north of us knowing the water will flow northwest and not flood our house. We haven't been flooded since 1995 and life has been good. Now Burlington and Dike District 12 want to raise the dikes higher and push water into our house. Your Urban levy will protect Burlington at our cost.

This is wrong! Burlington built in the wrong place but is lucky to have I-5 and Hwy 20 crossroads so commercial development happened. Now they want to protect this commercial development at the risk of thousands of people to the east. People and homes are more valuable than Costco's and Home Depots? Please think of the people who will be displaced by flood water that is pushed back on to them. What happens to their lives after their homes get flooded? Box stores and commercial development knew they were developing in the flood bull's eye. It will be a minor blip on the stock market for maybe not a day to a Home Depot but to people lives it can be very traumatic. Please think about the common people.

Julie Anderson

From:	John Matterand
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Feasibility Report and Environmental Impact Statement (draft FR/EIS) for the Skagit River Flood Risk Management General Investigation Study Comment
Date:	Monday, August 04, 2014 9:51:11 AM

As I reviewed the proposed solution for Skagit River flooding it appears that the proposal selected places the greatest weight on the economic savings gained by protecting Burlington and Mount Vernon flood plain areas. That is understandable, but that savings is based upon a clear transference of risk. I work in a dental office very close to United General Hospital and live just south of Clear Lake on Hwy 9. Both my livelihood and my water supply for my home are under a significant increased risk of damage from flooding by the increase in flood height brought about by the increased levee heights in Burlington. A mention was made in the study that the 1 foot increase in flood depths would only last for a day. I am not sure how that was determined but it does not matter to a dental office whether the flood damage is 1 day or 3 days, the damage will be extensive. With that increased flood depth the flood protection built into my dental office is negated.The increase in flood levels will obviously bring about an increase in flood insurance premiums that have already experienced a significant increase just last year. Are there plans to subsidize those increased costs for those of us in the storage area for Burlington and Mount Vernon? I believe that allowing Burlington, Dike District 12, and Mount Vernon to increase levee heights and reducing their flood insurance premiums should be offset by a subsidy of flood insurance premium increases for affected areas.

I do not believe that enough emphasis has been given to the risk to infrastructure upstream from Burlington. If United General Hospital has a flood protection structure built around it, it protects the building but if the hospital is completely cut off to ground transportation by flood waters it rapidly will lose it's effectiveness and will need to be evacuated by air. The importance of Hwy. 9 as an alternative to I-5 was demonstrated just last year but this Hwy. would be cut off with a significant flood event (increased likelihood under this proposal). Hwy. 20 east of Burlington would be cut off. I am a Commissioner for FPD #4 (Clear Lake). The Clear Lake Fire Building would need to be evacuated and fire events and medical aid calls might not be able to have a timely response.

In summary, I do not believe that this proposal addresses either the transfer of risk or the significantly increased costs for areas upstream from Burlington and would encourage some mechanism for this to be accounted for and paid for before this proposal is approved and implemented.

John Matterand DDS
PO Box 597
Clear Lake, WA 98235

City of
MOUNT
VERNON
PUBLIC WORKS DEPARTMENT

August 4, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

RE: Skagit River Flood Risk Management General Investigation, Skagit County, Washington, Draft Feasibility Report and Environmental Impact Statement

The City is pleased to see the County (the sponsoring partner) and the USACE achieve the important milestone of providing the public a draft feasibility report and undergo environmental review in the form of an Environmental Impact Statement.

The study seeks to accommodate important strategic objectives of regional flood protection. Thus the study aligns in large measure with the City's strategic goal to provide all of its residents reduced risks from flooding. It is the City's goal that such reduction be achieved at minimum level of FEMA 100 year flood protection as now or hereafter established by FEMA. Flood protection is the City's number one infrastructure priority. Large developed areas within the City's existing city limits and urban growth area are protected in some measure from Skagit River flooding by existing levees. Work in the GI to assure and improve the level of protection to existing urbanized areas is essential. The City's existing urbanized areas in the 100 year flood plain include many important and essential local and regional public services and infrastructure such as City Hall, the Superior and District Courts, Skagit County and City police departments, federal post office, BNSF main railway line, City's wastewater treatment plant, the county jail, the regional multi-modal transportation hub and historic downtown Mount Vernon. Failure to receive adequate protection to the City's existing urbanized infrastructure will have probable, significant, adverse economic, cultural and social-economic impacts to the greater region. Mount Vernon also retains the greatest population of any city in Skagit County. Mount Vernon urbanized areas located within the floodplain also include residentially zoned or mixed residential/commercial areas. Failure to address the existing urbanized area will have significant impacts to homeowners and residents.

Post Office Box 809 | 1024 Cleveland Avenue, Mount Vernon, Washington 98273 | www.mountvernonwa.gov | P: **(360) 336-6204**

The City's public works department has reviewed the report. The City continues to advocate that the GI Study and preferred alternative mitigation measures provide, at a minimum, 100 year flood protection as determined by FEMA to the City's Urban Growth Area. It appears that the feasibility report includes flood mitigation measures which if constructed provide flood protection at or greater than the City's desired 100 year level of service in many areas within the City with the exception of West Mount Vernon and some small outlying areas. To the extent the proposed mitigation measures provide flood protection at or greater than the desired levels within the City's UGA, the City is in general support the GI Study. In those areas which the study cannot demonstrate such flood protection, the City respectfully requests that the USACE Corps demonstrate through the EIS process that those areas within the City's UGA where measures fail to provide 100 year flood protection or greater will not receive adverse environmental impacts caused by the project, including but not limited to the results of rerouting, collecting or otherwise directing greater volumes of water during a flood event.

Lastly, another important area that we request to be more thoroughly addressed in the GI study is assurance that the selected alternative does no harm to others. The need for the project to mitigate for its adverse impacts to our neighbors and community members is essential.

The City looks forward to your response and appreciates the opportunity to comment in this process.

Sincerely

Es o , P. .
ublic Works Dir tor

Mayor Boudreau
City Council
Kevin Rogerson, City Attorney
Jana Hanson, Community and Economic Development

Upper Skagit Indian Tribe
25944 Community Plaza Way,
Sedro Woolley, WA 98284
Phone (360) 854-7090 Fax (360) 854-7042
August 1, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

RE: Upper Skagit Indian Tribe's comments / objection on the Draft Feasibility Report and Environmental impact statement ("DFREIS") the Skagit River General Investigation (the "GI").

Dear Ms. Hadley,

I write on behalf of the Upper Skagit Indian Tribe, a federally recognized Indian tribe (the "Tribe").

Facts About The Tribe And its Treaty and Federally Recognized Status:

The Tribe is a federally recognized tribe with a checkerboard Reservation in Skagit County, WA. The Tribe has seventy-five tribal member households on the Reservation and another approximately 225 households within Skagit County.

As a successor to 10 tribes and bands residing on the Skagit River and signatory to the Treaty of Point Elliott, the Tribe has been determined to be a Treaty Tribe in U.S. v. Washington with usual and accustomed grounds and stations ("U and A's) on the Skagit River, the Baker River and its tributaries. Upper Skagit is the primary tribe exercising its Treaty protected rights on the mainstem of the Skagit River above Mount Vernon, WA and the Baker River. The Tribe's current riverine fishing fleet is approximately 25 boats. These boats represent a minimum of 50 -75 households that rely for food and income on fishing on the Skagit River. For example, the Tribe's Baker River sockeye fishery produced 6,000 fish this year, which may seem small to the USACE, but is not de minimus to the Tribe's economic well-being. The sockeye fishery, which will be endangered by the GI's plans for the Skagit River and the Baker / Shannon Lake sockeye propagation, constitutes in value in even years about 1/3 of the financial support for the Tribe's fishing membership.

The Severe Impacts of the DFREIS and GI on the Tribe's Rights and Economics without USACE Consultation

USACE did not approach the Tribe for data to place in its analysis. If it had, it would have understood the extensive and potentially catastrophic economic and human cost of its proposals. As such, as discussed below, the GI dealing with the Skagit River and the Baker River (collectively the "Skagit River"), particularly as it relates to the Tribe's Treaty sockeye fishery,

will be severely impacted by the plans in the DFREIS. The Tribe is also an active participant in and intervener in the FERC relicensing for the Baker River project owned and operated by Puget Sound Energy.

Errors in the GI

First, to set the record straight, in a number of pages of the GI, e.g. pg. 2, 21, and 211, there is reference to 5 tribes with reservations or U and A's in the Skagit watershed. This is incorrect; the only tribes with Treaty protected rights in the Skagit watershed are the Swinomish, Upper Skagit and Sauk Suiattle. The GI also lists the USIT population at 230, while in reality; the Tribe has a membership of in excess of 1200 members, many of whom live in Whatcom, Skagit and Snohomish counties.

The DFREIS Does Not Adequately Evaluate the Impacts on the Skagit River to Treaty Rights and Endangered Species

The Tribe has reviewed the DFREIS for the GI and has significant concerns that the Army Corps of Engineers ("USACE") seems to have failed to consider that some of the proposed recommendations have severe impacts on Treaty Rights and on the Endangered Species Act ("ESA") challenges on the Skagit River. In fact, it seems that the USACE has ignored its fiduciary duty to the Tribe and has now described a flood reduction plan that trumps Treaty Rights and ESA in the Skagit River Watershed. Under section 2.5, the document states that the USACE is held to the Universal Constraints; "USACE shall ensure that the project would not jeopardize the continued existence of any endangered species or threatened species (including three ESA-listed species of salmonids) or result in the destruction or adverse modifications of the habitat of such species".

What is glaringly absent from the list of planning constraints is impacts to Tribal resources. As an example, in the Executive Summary, the study area does not mention the tribal, state, regional, or international importance of Skagit River fish stocks. The Skagit fishery resources are part of the management of international agreements ("PSC") and play a critical role in the rebuilding process underway for ESA listed Chinook, Steelhead and Bull Trout. The current Table 4.6 provides yet another example of the lack of consideration for listed fish species, citing outdated information about the monitoring and status of listed species. The lack of consideration of these facts, detracts from the USACE's obligation to protect the Tribe's Treaty Rights and to implement section 7(a)(1) and Section 2(c) of the ESA.

As noted above, the Tribe is also an intervener in and a signatory to the Baker River Hydropower Facility (FERC # 2150) Settlement Agreement, as approved by the Federal Energy Regulatory Commission ("FERC"). The settlement is structured around the intent to rebuild the Baker Sockeye run to sustainably harvestable numbers. In addition the license focuses on improving downstream (Skagit River) instream flows that better protect ESA listed and other treaty fishery resources. As a result, the inclusion of the Baker measure in all alternatives restricts the ability to analyze costs and benefits of such a measure. The Tribe is concerned that

the potential impacts to the Baker Sockeye rebuilding and the Treaty Fishery are not being studied nor analyzed in a manner that was committed to under the Settlement Agreement for FERC #2150, nor to the Tribe's United States protected Treaty Rights.

The Tribe believes that the current analysis in the DFREIS for the *Baker Dam Operational Modifications* is inadequate for protecting the Tribe's Treaty protected Tribal Fishery Resource. Settlement Article ("SA") 107 (b) and 107(c) were incorporated into the Baker River Settlement Agreement as a place holder for future USACE action and analysis. A USACE FERC filing on December 21, 2004 signed by Colonel Debra Lewis supports this statement. It was also clear from the December 2004 filing that the USACE did not believe the environmental analysis done for the FERC license met the requirements of NEPA and ESA with respect to additional flood control measures and that additional flood storage would require a thorough evaluation by the USACE. To date no additional studies (after the relicense period) of the environmental effects of additional flood storage have been undertaken.

The DFREIS compares the future proposed action to past conditions and fails to recognize the difference between the future proposed action and the future without project condition. The difference between the future without project condition (SA 106 Table 1) and the future with project condition (SA 106 Table 2) is that, under the without project condition, the annual drawdown (and associated reduction in euphotic zone volume) for Baker Lake occurs largely in November after the sockeye growing season. Whereas under the proposed action the flood storage is required by October, therefore the drawdown would start in September, thereby reducing the productive capacity of the reservoirs during the sockeye growing season. The proposed action would reduce the euphotic zone volume during September and October and relicense studies showed water temperatures and prey availability is likely significant during that time (Sockeye Smolt Production Capacity in Baker Lake and Shannon Lake R2 Resource Consultants 2010).

The DFREIS also states that "Peak spawning would be minimally affected by the adoption of Article 107 a and b, because of the start date of Oct. 1." Table 4-7 is currently not completed for sockeye, and without information on sockeye spawning in the upper reservoir it is erroneous to say the impact would be minimal. Please add to table 4.7 that adult sockeye migration extends into October, and spawning for Sockeye is September through middle of November. The proposed action would involve a larger and earlier drawdown than current operations. An earlier draw down would most likely prevent access of migrating adult sockeye into multiple delta tributaries. For hydropower operations to meet table 107 Aquatic Table 2 with flood control storage achieved by October, then operationally the draw down could begin as soon September which could preclude abundant water levels to support fish entering the delta tributaries that currently support spawning sockeye. Ten vertical feet of reservoir storage equates to a long horizontal distance, when the slope of the upper delta is so flat, leaving fish exposed to shallow water depth and no cover as they try to navigate through the draw down zone. This will increase both predation risk and bioenergetic costs, which would have acute impacts to these fish in the later stages of their migration when body condition has already been greatly reduced during their upriver journey. Without access into stable and hydraulically

connected waters, many fish would be forced to spawn in the Baker delta, where reservoir management would eliminate any potential productivity from these spawners (Upper Baker Delta Scour Assessment and Spawning Evaluation Study A-15; 2005). Although the majority of production comes from the hatchery operations, we cannot discount the productivity from natural spawners. Natural spawning fish provides insurances against disease and infrastructure failure, as well as ecological function and a naturally selected gene pool.

The current statements on page 131 about mitigating factors do not correctly support the claims that impacts to fish in both reservoirs will be minor. Both the 2004 and 2010 productivity reports were static measures of productivity from final reports completed in 2004 and 2010, while the Settlement Agreement defines a pathway for rebuilding Baker River sockeye using the existing productivity defined in the reports. It is imperative to look at the timing of reports and the development of the fishery resources Protection Mitigation and Enhancement (PM&E's) measures. The new hatchery facilities were completed in 2011 and the new Baker Lake Floating service collector was built in 2008, while the Lake Shannon Floating Surface collector was operational in 2013. Since both reports were completed, the fishery co-managers have been planting substantial sockeye into Lake Shannon with an understanding that this potential has been part of planning to rebuild this sockeye fishery. The Settlement Agreement outlines the critical steps and facilities for incrementally rebuilding the sockeye until the capacity of the reservoirs was realized, therefore any potential impacts and associated mitigation should use the future and yet to be determined carrying capacity of the lakes. It is erroneous to look back in the past and say that there is unused potential in the reservoirs; therefore a future action would only cause minor effects. The potential for drawdown concentrating zooplankton prey making winter foraging easier is at its best a speculative statement. What impacts could also occur due to flushing out prey items as the reservoir is drawn down, what competitive and predator relationships would be altered with the proposed draw down and what impacts would that cause for the sockeye prey base or sockeye intraspecific age competition? If there is zooplankton productivity occurring in September, whether reproduction of new individuals, body growth of already born juveniles or maintenance of fully grown adults, then the reduced euphotic zone could reduce active zooplankton production via reduced production of the phytoplankton prey base during an important feeding time for juvenile sockeye. This illustrates that production potential, not a short term increase in density, may be the appropriate metric with which to measure sockeye production potential. Moreover, if climate change warms water temperatures in the reservoirs and extends the active productivity season later in the year, there could be a longer period of lost production potential. The impacts associated with a smaller euphotic zone, on both invertebrates and fish resources needs to be evaluated and qualified with further analysis for Lake Shannon. The Settlement Agreement defined the mechanisms for rebuilding the sockeye run and had a placeholder for additional flood storage once additional studies and consultations were complete. A well-defined bioenergetics study could provide the means to quantify how the standing biomass in the lake and stock enhancement might intersect for estimating reservoir potential and to quantify the necessary mitigation for impacts to lake capacity. Such a study is needed to adequately quantify the complex interaction between water temperature, consumption rate and animal physiology, an interaction which ultimately determines the population production potential of sockeye. In

addition the Baker River supports Coho, and any reduction to the littoral zone would also impact the amount and quality of habitat available for the rebuilding of coho in the basin.

During the relicense study period a 2004 report A-25 "Evaluation of Project-Influenced Predation on Juvenile Sockeye Salmon" documented Native Char predation on sockeye. Additional monitoring work for FERC #2150 is also tracking bull trout observations in the Baker River System and through project facilities. The Settlement Article 104 Connectivity between Lake Shannon and Baker Lake suggest the bull trout population is increasing in the Baker Lake system. Given that Bull Trout have been documented as a primary predator to sockeye, and that the proposed measure could reduce sockeye capacities, the cascading effect of severe impacts on the sockeye intuitively leads to a concern that the USACE proposal will also severely impact bull trout survival. The Tribe feels, therefore, that additional analysis should examine how this measure could impact Bull Trout Recovery.

The Comprehensive Urban Levee Improvement ("CULI") alternative creates significant harm and degradation to the efforts to restore sockeye and ESA listed species on the Skagit River system. The Tribe and the other Skagit River tribes are fighting a battle to preserve or re-establish habitat which is being lost to development and / or current forest and agricultural practices. The Skagit Chinook Recovery Plan (Recommendation 15 pg. 84) states; "Construction of new dikes and levees should be prohibited unless mitigated for, resulting in no net increase in isolated floodplain area or additional loss of floodplain habitat." CULI promotes further habitat degradation by removing the alternative to include levee setbacks. In section 3.6 of the DFREIS, the USACE has committed a large oversight in its all-or-nothing approach to levee setbacks. This approach fails to evaluate the potential for flood storage and fish habitat benefits, which could be accomplished by targeting a subset of the originally planned setbacks located in geomorphically key areas along the levee system downstream of the urban core. No qualitative analysis has been completed to understand how these proposed measures would impact ESA stocks or Tribal Treaty rights.

The DFREIS utilizes a cost / benefit analysis to examine potential alternatives. However, that analysis completely ignores and fails to include any economic value for natural resources and tribal fisheries. Pursuant to the Water Resources Development Act of 2007 mandates this kind of inquiry. Section 4.2.1.2, Environmental Justice at page 174 notes "Each federal agency shall analyze effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low income communities...."

A dangerous, and perhaps catastrophic, assumption in the Corp's analysis is that of the aggradation rate and river bed elevation over the 50-year lifespan of the project. If these parameters are underestimated, the project area may be overwhelmed by flood flows in large events. The Corps made an incorrect conclusion in the DFREIS that the riverbed in the project area is currently degrading. This conclusion was based on conditions at the USGS gage in Mt. Vernon and a subsequent extrapolation from this single point to the project reach scale; however, a comparison of riverbed cross-section elevations between 1976 and 1999 in the reach indicate an opposite trend, one of aggradation, throughout nearly all of the project area.

Moreover, a recent upward shift in the discharge-stage height relationship at the USGS gage may indicate a shift toward riverbed aggradation at this location. Taken together, these patterns highlight the need for the USACE to more closely analyze past sedimentation rates throughout the project area. Such an analysis should consider temporal trends to assess the possibility that aggradation rates have increased in recent decades, whereby the Corps' estimate of 0.5 to 1.5 feet over the 50-year project period would dangerously underestimate potential increases in riverbed elevation.

In addition to analytical oversights of recent and historic depositional trends, the Corps' failure to consider future climate change scenarios will exacerbate risks to the project. Climate change is expected to increase riverbed elevation through at least two mechanisms: sediment supply to the watershed will increase through increased glacier retreat, landslides and bluff erosion. Such processes have already resulted in changes to depositional patterns and increased aggradation in downstream reaches of western Washington river systems. Furthermore, sea level rise is expected to increase the elevation of the downstream boundary of the Skagit River, causing aggradation to propagate upriver into the project area. In summary, the Corps has failed to adequately analyze the spatial and temporal trends of historic riverbed aggradation, and failed to consider a potential increasing rate of aggradation in recent years; meanwhile, the utter lack of consideration for climate change impacts will almost certainly further magnify these oversights, thus jeopardizing the long-term success of the project in reducing flood and human health risk. At minimum, the Corps should reevaluate the effectiveness and sensitivity of each alternative under realistic aggradation rates and prepare contingencies in the event that aggradation outpaces the assumed limits.

The DFREIS Fails to Adequately Assess the Climate Change Impacts on the Proposed Action

I also understand that the Skagit Climate Science Consortium has provided comments on the DFREIS. If the changes identified in the TSP ultimately prove to be inadequate in coping with future flood risks, it is unlikely the region will secure additional resources to analyze environmental climate changes, or make additions or modifications to infrastructure. Thus any proposed alternative put forward as part of the GI needs to be explicitly tested under all conditions that will likely be encountered, which includes climate change, sea level rise, sedimentation and increase river storm flows. Currently, the DFREIS falls short on completing a sound vulnerability assessment currently in use by other agencies in preparing for climate change.

The Analysis of the Economic, Cultural and Human Tolls on the Tribe and its Members is Completely Inadequate

As stated above, the Tribe's treaty protected sockeye fishery provides food for elders, cultural fishing opportunities for members in the immediate area of its aboriginal villages and food and financial assistance to the Tribe's growing number of fishers. The USACE's proposal impacting the sockeye fishery will eliminate as much as one third (1/3) of the income that the Tribe's fishers produce for better than 25% of the tribal households in the three county area

surrounding the Skagit River. Nowhere in the DFREIS are these facts produced, let alone analyzed. This deficiency is not only glaring, but produces a result which is contrary to the USACE's trust responsibility to the Tribe.

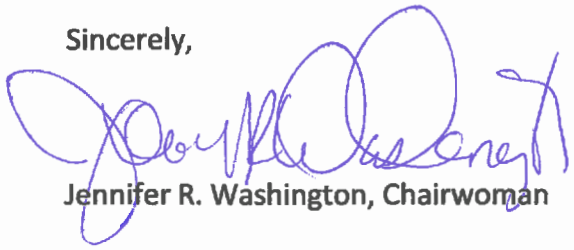
Conclusion

The DFREIS and the GI are wholly inadequate as it relates to the Skagit / Baker River sockeye fishery. Destroying a sockeye fishery and damaging the economic life of the Tribe's membership is contrary to the interests of a federally recognized Indian tribe and the Treaty of Point Elliott. For the above reasons, at a minimum, USACE must add to the GI and revise the GI in order to meet the obligations of the United States under the Treaty of Point Elliott, its trust responsibility and the obligations imposed by the ESA. Further information, study and analysis must be required and used to make the GI and the DFREIS documents factually and scientifically correct. Anything short of that goal would subject this matter to further legal scrutiny according to current standards.

Points of Contact

For further discussions and factual information, please feel free to contact Scott Schuyler or Jon Paul Shannahan at the above phone numbers or sschuyler@upperskagit.com and jonpauls@upperskagit.com.

Sincerely,



Jennifer R. Washington, Chairwoman

Cc:
Mark Celedonia USFWS
Erik Peterson Region 10 EPA
Tom Sibley NMFS
Brock Applegate WDFW
Larry Wasserman Swinomish Indian Tribal Community

SKAGIT RIVER GENERAL INVESTIGATION

NEPA PUBLIC MEETING

U.S. ARMY CORPS OF ENGINEERS

SEATTLE DISTRICT

JUNE 19, 2014

6:31 P.M.

Skagit Station

105 E. Kincaid Street

Mount Vernon, WA 98273

REPORTED BY: Tara L. Cunha, CCR 3310

MS. WETZLER: Good evening. My name is Lynn Wetzler. We will have a presentation for 30 minutes, and then we will have a comment session from, 7 o'clock to 8 o'clock. We'll go over more of the logistics when we get to that portion, but I'd like right to introduce our Deputy District Engineer, Olton Swanson for the Seattle District.

MR. SWANSON: Thanks, Lynn. It's great to see everybody here tonight. I really appreciate folks taking time out of their busy schedules to be here. Thank you for your interest and involvement in the Skagit River Basin General Investigation Study Process. And I also want to give a thanks to representatives from Skagit County, the study's non-federal sponsor. I'd like to recognize Skagit County Commissioner Ken Dahlstedt, and Chairman Ron Wesen, who will speak briefly after I'm through. Sharon Dillon couldn't be with us tonight.

Additionally, I'd like to recognize our (inaudible) representative (inaudible) Tom Buclet from (inaudible) Representative, Julien Loh from Representative DelBene's office, and Joe Downes from Senator Cantwell's office. So I appreciate you all being here as well.

We're here tonight because we understand the importance of providing flood risk management to the lower Skagit River Basin to reduce flood risk and potential damages from flooding. The Corps is committed to the study,

and will continue working side by side with our Skagit County partners to complete it, and address flood risk management in the lower Basin.

The study team has identified a Tentatively Selected Plan which you will hear more about tonight. All of the alternatives that were considered reduced threats to life, safety, and economic damage, but the plan we selected stood out because of the lower construction, operations and maintenance costs, as well as the lowest -- having the lowest impact to agricultural lands.

I invite you to personally review the plan which is available online and at local libraries, and to provide us your input. The plan is undergoing a number of concurrent reviews, including the public review and comment period, and the plan may be modified based on your input.

Tonight we will provide an update on the status of the study and you will hear more specifics on how the plan addresses flood risk management in the Basin. The members of our Project Team from the Corps, the project sponsors, and other stakeholders have worked hard on this project. We've come tonight to hear your comments and obtain your input on this important study. The team will consider your thoughts as it continues to aggressively pursue completion of this study. It's significant that in an era of declining federal budgets, this study continues to be funded and move

forward towards recommending a flood risk reduction plan for Congressional authorization.

I'd also like to add that those projects that have found success in the recent past in the federal system have been those that have had an aligned local community. And if we aren't there yet, it's something we hope to address so we can continue our work and move forward. Congress determines which projects are funded, and your representatives have a say in that process. Communities that are aligned send a clear message to your representatives that this project is important to the Skagit County community.

We're here to listen and collect your comments and questions tonight. We want to be thoughtful and considerate in our responses, so we'll not look to provide responses tonight. We will take some time to evaluate them, your questions and comments, and include responses in our final report.

Every comment will be considered as we move forward. We invite you to share your thoughts with us and urge you to provide each speaker with an opportunity to present his or or her views uninterrupted during the time limit we have set. My expectation is that you will each help to foster a safe, civil, and respectful setting for everyone here this evening. Thank you once again for your interest and commitment to address flooding in the Skagit River Basin.

And now I'd like to turn it over to Chairman Wesen, Skagit County Commissioner, for his opening remarks.

MR. WESEN: Thank you very much. It's really nice to have this good crowd here tonight. We have come a long way over the years on this Skagit River Investigation Study, and we are getting closer to the end of the project. And I really want to appreciate the Army Corps, all the work they've done here, all the county staff, all our group off workers that we've had on this project as it's gone forward, our dike districts, our grading districts, all the local people involved. And what we're here tonight to do is to comment on the project. It looks like that has gone towards the top of the list and we need to look at those things. And once again, thank you for being here. Put your comments in so the Army Corps will be able to come back and make comments on your comments, and so we can have a good project going forward.

I also want to thank our legislative and congressional, and our senators who have helped out on this project all long. Without their expert help to get this thing --- being one of the first projects to go through this special program, we wouldn't have gotten where we have. Let's get this done tonight. Thank you.

MS. WETZLER: Thank you. So following this presentation, as I mentioned earlier, there will be an

opportunity for comments on the draft and feasibility report and environmental impact statements. The comment period ends on the 21st of July. If you're interested in commenting tonight, please make sure you're signed up to do so. There's a sign-up sheet over on the table that you walked by when you checked in. And as we mentioned, tonight is an opportunity to provide comments, but it's not a Q and A time. And if you're not interested in speaking tonight, there's other ways to comment, and I'll go over those towards the end of the presentation.

The Skagit River General Investigation Project is a single-purpose flood risk management study with objectives of reducing damages, protecting population in the Basin, as well as protecting critical infrastructure such as schools, hospitals, and pipelines. The existing levee system provides approximately 4 to 5 percent annual chance of exceedance [sic] or 20 to 25 year level of protection. In tonight's presentation I will use level of protection terminology; however, when you read the report or if you look through it, you'll notice that we used the annual chance exceedance [sic] terminology.

Flood fight efforts have previously prevented damages, although they are risky and unreliable ways to provide long-term protection. The Tentatively Selected Plan will be presented tonight, and that milestone is the second

of five planning milestones in the Corps study process. The process is a routine that has made a recommendation of the plan which was the proposed plan forward to address flood risk in the Skagit River Basin.

The Integrated Draft Feasibility Report Environmental Impact Statement is out now, the 45-day national Environmental Policy Act Public Review, as well as the concurrent reviews conducted by the Corps, Agency Technical Review, and then also an Independent External Peer Review which is outside of the Corps of Engineers.

This is an opportunity to provide input on the draft report. The draft report discusses the planning process, the process of developing potential solutions to reduce flood risk in the Basin, including evaluating those flood risks, formulation, and screening of potential alternatives.

Comments received during the concurrent review period will be taken into consideration to inform the feasibility level design, and updates in the final report, which is when you'd see responses to comments submitted during the current comment period.

The study area is shown here. And the study area is a large area spanning several counties in western Washington. The project areas focuses on the lower Skagit River Basin located within the floodplain and the Baker River Hydroelectric Project. The line is a little bit

faint, but roughly that is the project area. And there is a handout of this map in the back if you would like to take it with you.

The draft report tells the planning story of measures were developed and then also two alternatives. We developed more than 20 management measures that could address flood risk in the Basin and combined and assembled them into alternatives to address flooding. At the last public meeting, which was in the Spring of 2012, the preliminary array of alternatives was presented. Since then, together with the County, we have refined the alternatives to the Final Array and identified the Tentatively Selected Plan.

The Final Array of Alternatives are: The No Action Alternative, which is if no federal action was taken; the Comprehensive Urban Levee Improvement Alternative, which is improvement to existing urban levees and some new levees. So the key here shows some of the levee work that would be done. This is an overlay of all alternatives with obviously the exception of the No Action Alternative.

The Joe Leary Bypass Slough is in the Final Array. It is an outlet here. That will be a bypass channel too, Padilla Bay, and then putting this bypass down here with an output to the Swinomish Slough.

All of the alternatives in the Final Array include

improvements to existing levees, as well as some new levees, and then for the bypasses, additional earthwork to construct the bypasses.

For comparison purposes to the Final Array of Alternatives, a 100-year event was used to compare and to evaluate as conceptual level designs to identify the Tentatively Selected Plan. The Final Array of Alternatives are complete and stand-alone alternatives; however, measures can be added to the alternatives that could provide additional benefit. And in this case, the Baker Dam Operational Modification Measure and Non-Structural Measure, which is tasks such as elevating and raising structures, buyouts, flood-proofing, and early warning systems, can be added to any of the Final Array of Alternatives. The Final Array of Alternatives were evaluated and compared, using criteria -- a range of criteria, but some that I want to specifically point out this evening is ensuring that the alternative that reduces flood risk to urban areas, least adverse impacts to agricultural resources, environmental resources, real estate impacts, and which alternative is the least costly to construct. These are some of the criteria that were used to identify the Tentatively Selected Plan, which essentially best meets the study objectives.

The Tentatively Selected Plan that has been identified is the Comprehensive Urban Levee Improvement

Alternative, which most cost-effectively meets the objectives of reducing flood risk damages and risk to life and safety. This alternative would provide flood risk reduction for urban areas of Burlington and Mount Vernon by improving and raising existing levees along the Skagit River and constructing two new levees to the Burlington Hill Cross Levee located here, and the Riverbend Cutoff Levee here, as well as a flood wall at the Lyman's Park located right there.

The current conceptual design assumes no modification to bridges in the Basin. This alternative, as I mentioned it, provides protection to the urban areas of Burlington and Mount Vernon, as well as schools and fire stations in the Sedro-Woolley Wastewater Treatment Plant, and the United General Hospital. Again, this is a complete and stand-alone alternative; however, the proposed plan does include non-structural measures, as well as the Baker Dam Measure, which provides early seasonal flood storage at Upper Baker Dam. So we will be providing flood storage one month earlier starting on October 15th, and flood storage at Lower Baker Dam from October 15th to March 1st. So the similar time frame as the Upper Baker. This is consistent with Article 107 A & B in the Federal Energy Regulatory Commission for the Settlement Agreement for the Baker River Project.

The Baker Dam measure would provide some incremental flood protection to areas upstream of Burlington and Mount Vernon, with reduced flows and stages downstream of the Skagit-Baker River confluence.

Our analysis shows the Comprehensive Urban Levee Improvement Alternative is the least environmentally damaging among the Final Array. In addition to the environmental analysis that has been conducted, we conducted economic analysis. After identifying the Tentatively Selected Plan, we evaluate to determine the National Economic Development Plan. The federal objective is to contribute to the nation's economic development, which determines the Federal interest. We hope to reasonably maximize net benefits or damages that are avoided from the floods and where the benefits are greater than the costs.

Once the Tentatively Selected Plan was identified, we looked at three scales of that Comprehensive Urban Levee Improvement Alternative. So three levels of protection, if you will. We evaluated and analyzed those to identify the National Economic Development Plan. So next look at the three scales of the Comprehensive Urban Levee Improvement Alternative, which are tentatively selected plans to identify the National Economic Development Plan. We looked at the 75-year level of protection, 100-year level of protection, and 250-year level of protection. The scales

include same project features with different levee elevations that provide that level of protection. The table shows the future without project annual damages that can be expected without a project. Also shown is the expected annual damages with the project, and damages prevented with the project, also know as the benefits. Damage will reduce by approximately half with the Comprehensive Urban Levee Improvement Alternative, with protection to urban areas of Burlington and Mount Vernon, and costs for the alternative range from 203 to $228 million.

Costs were annualized and compared to annualized benefits. Net benefits are the annual benefits minus the annual costs. Alternatives that reasonably maximized net benefits contribute to National Economic Development, and are recommended for Federal participation. The 250-year Comprehensive Urban Levee Improvement Alternative maximizes net benefits and result in a greater benefit-cost ratio at 1.9 -- see in the gray box here -- and is the National Economic Development Plan that we have identified.

Further analysis will be conducted to the feasibility-level design phase to look at the use of non-structural measures to offset transferred and residual risks. Once the National Economic Plan is determined, the environmental impacts of the plan are considered and evaluated. This slide shows resources analyzed for the

environmental consequences in the draft report. As mentioned earlier, the Final Array of Alternatives were designed at a conceptual level for the 100-year event, and these resources were analyzed based on those 100-year conceptual designs.

For each resource, climate change, and/or sea level change were evaluated where appropriate. Typically the approach was how climate change would affect the project in relation to the future without project condition. We strive to use existing information and best professional judgment where possible to establish the existing condition and No-Action Alternative, as well as for analyzing and evaluating potential direct, indirect, and cumulative effects of the Final Array of Alternatives. The assessment of environmental effects is based on comparison of three action alternatives to the No-Action Alternative consistent with the National Environmental Policy Act. And there are two posters in the back of the room that have a little bit more detail about the environmental analysis that was conducted, and then in the report there is much greater detail as well.

The Corps six-step planning process and the National Environmental Policy Act process are in sync for Corps studies. For Corps planning studies there are five milestones that a project successfully achieve to put a

feasibility report to Congress for authorization of a project. The Skagit project has achieved the first two milestones, the Alternatives Milestones in August 2012, and the Tentatively Selected Plan milestone earlier this year. We are working towards the third milestone, the Agency Decision Milestone where, we seek Corps Agency concurrence on the plan to move forward with the feasibility-level design.

Right now we are in the public and concurrent review period. The 45-day public review and comment period was initiated on the 6th of June. Public comments are due on the 21st of July, and comments will be considered and could modify the plan to move forward to the feasibility-level design.

As we work forward to the next milestone, the Agency Decision Milestone, we'll look for concurrence on the plan to move forward to feasibility-level design and make appropriate changes or updates to the Integrated Draft Feasibility Report Environmental Impact Statement. The feasibility-level design will be initiated following concurrence on that plan which we will move forward with feasibility-level design on. And we would be seeking to complete feasibility-level design in 2015 with our final report also completed in 2015, so that we can get the report to Congress seeking authorization of the project.

The National Environmental Policy Act encourages citizens to participate in public hearings, scoping meetings, comment periods, like we're having tonight, where you can submit your comments, written or orally. Public involvement is a very important to the NEPA process. It's an opportunity for the public to participate in a federal decision-making process and direct an agency's attention to the community's concern.

In August 2011 a Notice of Intent scoping meeting was held, and comments from that meeting were taken into consideration during the alternatives formulation and process and the comparison and evaluation of them. This is another opportunity for you to review the work we've done and our analysis conducted by the County and the Corps, and provide comments and inputs on the Integrated Draft Report. We expect to have the final report in 2015, and that report is where you would see responses to comments that are submitted during the current comment period.

The draft report is available online. The link is here, but we also have business cards on the table that you signed in on. It's also available in the Mount Vernon, La Conner, and Burlington County libraries as well as the Skagit County Office.

So I'll go through the procedure on how we're going to go through the comments tonight. There's a couple ways

you can submit them. If you're interested in signing up tonight, I know that we have several individuals who have already signed up. We will go through those in the order that the names are written. We also have comment forms in the back. You can e-mail us your comments, write them in, or present them tonight.

If you've already signed up, you will be called to come to the microphone in the order you signed up. Please state and spell your name when you come to the microphone prior to providing your comment. You will have three minutes. We have a court reporter who will be documenting all the comments tonight, and they will be included in the final report. Tonight's comment period will promptly end at 8:00 p.m. Evan Lewis will facilitate the comment period and Kera Simons (ph) will keep time. She will -- Kera will hold up a yellow sign when there's one minute remaining, and then a red card when the three minutes is up. So Evan.

MR. LEWIS: Sure. So I ask that you come up to the mic so that the court reporter can get -- can hear and see, and also so that everybody else can hear. So I'll name the current person and the person that is next. And we'll start off with John Roozen and the next is Darrin Morrison.

MR. ROOZEN: How come I have to be first. My name is John Roozen, R-O-O-Z-E-N. I live at --

THE COURT REPORTER: I can't hear you, sir. I'm

sorry. I need you a little closer to the mic.

MR. ROOZEN: I'm John Roozen. I'm a farmer in Skagit County, and I farm at 16031 Beaver Marsh Road with my brothers. And a few of my comments tonight are going to be very simple, but sometimes that's important for me as I build the foundation in my mind. This first little part might not be accurate, but it helps me to form what's happening.

So if they take this river and it's 3,000 feet roughly from the point of origin down to the mouth, and 2,700 feet of that is to about Rockport or Concrete, something like that, it doesn't matter. So it makes no difference what we do down here. We're going to get wet. We are going to get very wet because as it slows down in this last 300 feet and then it gets less and less, and 50 feet or so down here in the Basin. We're going to get wet if we do nothing. We're going to get wet, some of us, if we do this. So having said that, I think this is an unbelievably exciting moment that we are going to make some improvements in the flood situation in Skagit County.

Having said that, I know it's virtually impossible to protect everyone. The amount of money that it would take to protect the whole valley would be beyond what we could afford. So having said that, a certain amount of the water is going to overflow. The overflowing parts of water is

going to affect some of us and agriculture, and in some other places whether it's land, crops, or buildings, or whatever it doesn't matter. So the important part of that is what goes -- we sometimes say what goes in must go out, but in this situation, what goes out of the river must go out fast.

So I hope that in the design you're taking into consideration what is out there which is a world-class drainage system which is draining up to 50, 60,000 acres, 30,000 acres of this valley could go under in a limited amount of time. So it's draining that every single day. You're going to ask it to do more. So I hope you're going to analyze how it's -- the water is going to go out to this tide as you let it go out of the river. That's very important to us and we need to know that before we go into it. So then you take where that water is going to go, whether it's zero on a hot day in the winter -- or summer, or it's more and more and you give it more and more. We need to improve those discharges. They're already there now. They work very well, but they're going to have to work better. So where the tide gates are right now and where the system goes out right now, needs to be improved. Having said that, if you don't put all the water in one of those, try to distribute it evenly and I don't know if you are, but every one of those taking a little, the old theory of many

hands make light work, would be awesome.

Now, I will say it's built and it's working and you told us that, and it's leveeing [sic] and everything is good. What's the most important part that happens next. That the part that goes -- that stays in the river that goes out, doesn't get worse and worse every year. So if I stand on the North Fork Bridge right now or go anywhere my motorcycle went when I was 15 years old in 1965, when the river had no trees and it flowed bank to bank wide open -- go on the North Fork Bridge right now, stand there and look at how choked it is. As the trees grow in, it gets worse and worse and worse. As it gets worse and worse, it's going to overflow on us more. So it all goes back to the critical part of how you're going to deal with the overflow that's going to go on in the rest of the land. And in the process of doing that, we would protect the life and property and everything in the best way possible.

So there's a couple comments I have on taxing and stuff, but I don't think that's what this is about.

MR. LEWIS: Certainly you can submit them in writing.

MR. ROOZEN: I can do that. Thank you.

MR. LEWIS: I just want to make one more comment. There is cord here, so if you're coming from that side, please watch your step when you are coming and going.

Darrin Morrison is next followed by --

MR. MORRISON: I don't have anything to add.

MR. LEWIS: Okay. Dan O'Donnell is next followed by Marv Pulst.

MR. O'DONNELL: I'll send in by e-mail.

MR. LEWIS: Okay. Marv Pulst followed by John Shultz.

MR. PULST: My name is Marv Pulst, P-U-L-S-T. I'm the Director of Public Works for the City of Burlington. The City of Burlington is delighted that the Corps has produced the Tentatively Selected Plan after years of study, discussion on the issue of flood threats in the Skagit Valley. The Draft Feasibility Report is thorough and gives the reader an appreciation of why the General Investigation Study has been years in the making.

Solving the flood threat in the Skagit Valley may seem to be simply a huge engineering task engaging our civil and hydraulics engineering skills, but this report demonstrates that it's much more than that. Careful consideration has been given to environmental issues as demonstrated in our slideshow earlier. Public safety, regional economy, cultural issues to the habitat, agriculture, et cetera, very thorough.

The City of Burlington applauds the selection of the Comprehensive Urban Levee Improvement option. This approach

is consistent with the levee improvement project, which the city in Dike District 12 have been independently working on. We are committed to continuing this effort and the District Corps gives us the assurance that we are doing the right thing. We look forward to working towards a common goal with the Corps and the County.

MR. LEWIS: John Shultz followed by John Semrau.

Mr. SHULTZ: Before we get started, you have a slide (inaudible.) My name is John Shultz, can you hear me?

THE COURT REPORTER: No. I'm sorry.

MR. SHULTZ: My name is John Shultz. I'm an attorney for Dike District 1 and Dike District 12. I also helped formed the dike district flood parties in 1, 3, 22, 72, and 12. So I've been pretty much engaged in flood control for quite some time. I'll speak on behalf of number 1 and number 12, but also really on behalf of all the districts because we've been working for years to form some type of partnership for flood control. We've worked with the County, we've worked with the Corps. The Corps are our best friends up here. We deal --

UNIDENTIFIED SPEAKER: John, can you speak a little louder. A lot of us have been on tractors.

MR. SHULTZ: Oh, okay. Sorry. So we've done a lot of work on flood control over the last few years. Now, I was one of the first people to criticize the GI study. It

had gone on for 17 years without any resolution. We all pretty much got jaded. We were thinking this day would never come. I'm like John Christian (ph) now. This is awesome. And I actually read through about a 100 pages of the study. And this slide here really tells it all. Now Dike 12 is doing (inaudible) there's been some dispute, appeal, some criticism, but that's what you have when you have disorganization because over the last 17 years we've had flood projects. When it floods within one or two districts, we'd repair or (inaudible), you know, (inaudible) 99 projects, but it was just mostly the district who were damaged and injured who did it. What this does -- what the GI study does, is it makes it much bigger not to mention the fact that the Corps pays for it. Of course, they pay 65 percent, we pay 35 percent. But this is just a great day because Dike 12 can have a project that runs for I think about six miles on the river with some improvements by Sterling and down below.

But looking through the GI study, what this includes is all the other districts. And I'm really quite amazed because Dike 1 has problems because, you know, water is going to be given, drainage folks has problems, and the (inaudible). The Riverbend (inaudible) it has problems. But most importantly up in Sedro-Woolley they had argued against our permit because they felt more water would go in

the hospital and the wastewater treatment plant. Well, guess what, see the "H" up there, this has a plan for rain dikes around the hospital, a wastewater treatment plant. We have other levees around the Riverbend area, Dike 1. And so the only way you can get this done is to have a form that we have now, and have an organization that has the money to spend it and do the research. So I applaud the Corps. You guys did a great job, and the County did a great job by shortening this study and getting it done in three years. So we are absolutely on the right track. Whether this can be funded or not, that remains to be a different story. But I think you'll find most, if not all the dike districts, in favor of it.

The drainage districts, I mean, now is the time to respond. Now is the time to comment. Drainage is vitally important and we support you guys since you are going to take more water in. We need to get the water out. So now is the time for everybody to comment because I'm convinced the Corps will address them. So it's a good thing. There's a lot of things to like about this.

MR. LEWIS: John Semrau followed by Sylvia Matterand.

MR. SEMRAU: I'm John Semrau, S-E-M-R-A-U. I represent Dike 12 as a District Engineer. At this time based on our preliminary review of the study, Dike 12

supports the efforts of the Corps' Comprehensive Urban Levee Improvement Alternative. We do have a few questions. We have talked to Karen who will being doing additional dialogue including our written comments.

Dike District 12 is kind of unique. We have both rural and urban levees protected under in this plan. We also has both river levees as well as we have some sea levels. Something that we do have some questions about, you know, is once we exceed that 25-year protection on the river, how are we going to get the water out from the lower end to the floodplain. I'm not sure if that's addressed at this point, but we will put those questions in writing and get those answered.

I did want to just mention something from section 3.2.1 of the study. That text quotes that the urban regions of Mount Vernon and Burlington accounts for approximately 46 percent of the total expected annual damages. On that same page table 3.5, you can also see there that Burlington alone accounts for approximately 38 percent of the total expected damages. This includes about 69 percent commercial and 39 percent of the industrial damage potential within that floodplain. Protection of these community and economic resources to that .4 percent of the annual chance of exceedance [sic] is very important to all of Skagit community. We certainly look forward --

THE COURT REPORTER: Sir, I'm sorry but I missed that whole last part.

MR. SEMRAU: Oh, we look forward to the plan moving forward to construction.

MR. LEWIS: Sylvia followed by Roger Knutzen.

MS. MATTERAND: Sylvia Matterand, M-A-T-T-E-R-A-N-D. I'm from Clear Lake, and congratulations Burlington. You look like the big winners. I think the folks at Clear Lake are not quite there with the folks from Sedro-Woolley. And I have some concerns about some of the infrastructure, particularly the hospital, Highway 9, the schools, the fire district building, the post office, some of my friends and neighbors. I think there's a lot that isn't being considered. And I hope that in this plan that the drainage districts will get a lot more support. And that there is money in place to compensate those who will be having a lot of the damages.

I'm disappointed that I feel like this is pitting community against community, and isn't really being supportive of the County. I feel like the city -- and it's pretty obvious if you look at the numbers, Burlington is the big winner. La Conner doesn't even come out that far ahead in this plan. And those of us who live outside the City of Burlington, and who aren't friends with the Corps, and don't meet with them every week or so, are really getting the

short of the stick.

If there's any way that our comments could make any changes, I'd feel better about this, but I've been to other of these meetings, and I've heard other comments and it doesn't seem like it is in consideration.

The wall around United General sounds like it's going to pretty much become pretty much ineffective. And I worry also about the nursing home that's on Highway 20. There's another senior housing facility near the hospital, my husband's office, some other businesses around the hospital. So there's still a lot of work to be done. And I'd like the County to take those things into consideration for the final plans. And please give the drainage district the ability to do their job.

MR. LEWIS: Next speaker is Annie Lohman.

MS. LOHMAN: I don't want to speak.

MR. LEWIS: Then Roger Knutzen followed by Bob Helton.

MR. KNUTZEN: I'm Roger Knutzen with drainage district 14. I'm one of the three commissioners. Our district was formed in 1890, 125 years ago. And it's been painstaking doing all of the infrastructures that's necessary in order to have that system. We have that system right now, and we're pretty proud of it.

There's two things. There's the national disaster

and the created disaster. When the Samish River overfloods and there's been (inaudible) to our system, we can accept that. It's a natural diaster. To drainage district 14, this is going to create a disaster because as the water overtops in the Sterling area, this pink line above is going to force it around the topside of the hill, and it's going to put it right into our drainage district. And it comes out and tosses that out to the Business Park, and at that point the Corps project is over. The problem is ours. And I ask the Corps what kind of volumes are they expecting would come into there, and they said that the County has that handled. And I asked the County, and they said they've not looked at it. They have no idea. So it's pass the buck there as far as what kind of volume it might be. But we know it's more volume than we can handle because we are at capacity right now on the Samish River so it's even more.

To improve our district it's tough enough to get money from agriculture to improve that. What's even tougher is to get money from the Corps -- to get permission from the Corps of Army Engineers to do these things. I can see for a lot of the county this is a really good project. A lot of the drainage district -- but in my opinion I think that the Corps has thrown Drainage District 14 and the Samish Basin under the bus in order to create this project. Thank you.

MR. LEWIS: Bob Helton followed by Dan Lefeber.

MR. HELTON: Bob Helton, 21032 Little Mountain Road. I moved in --

MS. WETZLER: We need to wait for the train to pass.

MR. HELTON: I thought I solved my problems by moving into a 3809 foot altitude in the mountains. After achieving that, (inaudible) in 1999 about the flood situation as a curious engineer. So I have followed along the old paths that have been followed up until this point. And I agree with all the positive comments that the prior speakers have made.

My concern as a teacher, taxpayer on this plan is that there is adequate space to extend a back slope of a higher dike to maintain the protection that is being housed in this plan. And my question to the Corps is basically pretty simple. What level of sea-level rise can we accommodate and still maintain a three-foot reserve levee height over the next 100 years assuming that the sea level doesn't rise too much. But I think we have to know how long our insurance plan is going to last. Thank you.

MR. LEWIS: Dan followed by Ed Lipsey. We are getting down towards the end of our speakers. So if anybody would like to add their names, please see Scott and we will get your name on the list.

MR. LEFEBER: Dan Lefeber, last name is spelled L-E-F-E-B-E-R. I'm the Operations Manager for Skagit County

Dike District 12. I grew up west of Mount Vernon. My permanent residence is in Sedro-Woolley. I work in Burlington. My ancestors all, say, three and four generations of farming in Skagit County, you know, Bayview, Burlington, Mount Vernon. So I kind of have a feel for the whole realm of that, I believe.

Dike District 12 supports the basic premise of this, the study, the results of it. We know we have to protect the critical infrastructure. And we witnessed -- like when we had the brief gap in Interstate 5 last summer. We know that flooding could do those kinds of things. Certainly all of the freeway and river traffic has increased dramatically. It had a lot to do with not just Congress locally, but all around. We all need to be strong everywhere.

We need to protect the people we know within our district. That's the main job I'm charged with, but we still, as in every situation in life, I believe need to treat others like we want to be treated ourselves. It's very important. While I say the district supports the context in general, we still reserve the right to review some of the aspects in general because there are some potentials I believe and maybe they cannot be avoided, and all we can do is the best we can do based on all the alternatives. There's probably no perfect solution, but not to back it up any more than we have to on people, and to not

send the water unfairly towards one area versus another. As long as we can all share in it and all somehow survive in the more than likely scenarios that will happen in our lifetimes.

It's going to be a hard task, and it will not be perfect as many situations in life are not perfect. But we need to do the best we can to be considerate of others, work hard as a united front, and then I think we might really get about as good as we're probably going to do in this lifetime with the financial wherewithal that we have.

I think we need to try and listen to each other and do the best we can. I think the Corps has listened to us, and the process will continue to refine. We need to make sure that the numbers are really explained well to everyone so we know volumes of water, depths, directions, all the potential outcomes. No one deserves to be, let's say, flimflammed on this. Anyway, hopefully we can all work together and get the perfect plan. Thank you.

MR. LEWIS: Ed Lipsey followed by Leonard Halverson.

MR. LIPSEY: Ed Lipsey, 30816 Lyman Hamilton Highway, Sedro-Woolley. I'm not sure (inaudible) because I live up quite a ways ahead of all this stuff. And it seems like we're trying to control the river from the wrong end. I do like the idea of the upper dams and that kind of stuff. But one of the things that I've talk to several engineers in

the past years is we have a rain problem, and we have a snow problem, and it comes from up there. And anyway living in the area of -- farming in the (inaudible) Islands, of course we get wet and in Hamilton, if you live there, we get wet. But one of the engineers told me, he said, when we start working with the weather -- and I asked the question, why are we working with the weather. Well, he says, whenever you see the storm come in if you will drop your -- if you will peak your river up to 28 feet and hold it there, all that storm water goes out, he says then you shut your dams up. He says let it go then. And by doing so he says one of the things that we have here that's never mentioned is we have a flash flood. It's 24 up and 24 down. That's all we've ever had. So I just think that it isn't like it's going to hold all the water. The lower part of this river is filling in from what I heard. And it needs to be loosened up a little bit so it can't escape. And if it can escape, and the dams do their part -- I mean, weather reports come in all the time. Why can't we work with it and use these dams. I was told by one of the Puget Power people a long time ago that these dams are hydroelectric. They're not --

(Train came through.)

MR. LIPSEY: Anyway, I think that working on both ends of this river, the upper and lower, is where we're

going to win if we're going to win at all. Thank you.

MR. LEWIS: Leonard Halverson followed by Carol Ehlers.

MR. HALVERSON: Leonard Halverson, 11558 Sterling Road, H-A-L-V-E-R-S-O-N. This project, GI project here, kind of reminds me of a Clint Eastwood film. It's got the good, the bad, and the ugly in it. The good part I'll start on first. We're doing something with the Baker Dams, getting some help up river and Skagit City Light needs to be brought to the table somehow. Nobody got there for their reexamination.

The bad, we were basically promised an early warning system in 1975, and again in 1990. I don't see it in the paperwork. I don't see anything for cleaning up the river, things that have been put in it. Goat Island Dike by the Corps fill at the bridge corridor, the three bridge corridor, the river (inaudible) railroad tracks in Burlington, Removal of the wing dike in District 12 and/or excavation at (inaudible) to get the water around the corner.

The preferred alternative here for District 12 Dike is the ugly. They've been a problem for 50 years, maybe 100, they've passed the water up river, Sterling, (inaudible) Sedro-Woolley, Clear Lake. They passed it down river to all the rest of the dike districts and Fir Island.

They have to be made to take water over the top of their district for anything to work as a dike project or as a flood project in Skagit County. They have to take their share. It has to be spread out and evenly distributed. The Fir Island just can't stand it, and neither can the Samish River Valley. They had a flood out there a few years ago in Samish and they didn't farm all summer up there, just from their own river let alone the Skagit's. Thank you.

MR. LEWIS: Carol and then Jason Easton. And Jason is the last person I have recorded so, again, if somebody else would like to speak, please sign up with Scott.

MS. EHLERS: Carol Ehlers, E-H-L-E-R-S. You have my address because when I testified at the scoping, you did the right kind of process and sent me a postcard about this meeting. I'd like to compliment you. You're doing so much better than the Navy did a couple of months ago.

There is something that I wish you would do. Anacortes is part of the County, but this document isn't in their library. Concrete is part of the County, the document is not in their library. It's a long way to come. And if one person here in Mount Vernon is reading the document, you have wasted (inaudible). And many of us, especially people who work and think like I do, want to a read a paper document so that you can put your finger in one point and another finger in another point and flip back and forth, and

see how this section relates to this section, and why this is proposed when you didn't think it should be, but, oh, this is a new idea.

Now, there's a lot of people in this room that have been taking part forever. I think my first light (ph) community meeting was in 1988. So there's a lot of old faces and we've spent a lot of time, and I never thought we would get here. So that's the third nice thing you can say. As long as you give us the paper copy to read.

Now, thank heavens you are finally able to connect one part of the flood protection on the Skagit River, the lower part (ph) and Lyman's Park. I've been trying to figure out why it hasn't been overflowed all these years, and you're going to actually do it. You're also going to protect the senior citizens in Burlington, but as it was brought up, you're not going to protect the senior citizen homes by the hospital in Sedro-Woolley. Now, when New York City didn't bother protecting the seniors, they've gotten sued for it. And they're going to have to pay a fortune because when seniors are in a home, they aren't mobile. They can't get up and drive away. There's no place in the emergency management process in this County to take them anywhere. They're no place to take them. They're working on a National Hazard Mitigation plan now. I don't see any relationship between that document and this one. And you

need to have it. You need to be working together because what you do in this, relates to what they do and can do, might do, or can't do. And you've got to help Mark do it. He's got to get it done this summer.

So those are the things that someone living well out of the floodplain -- and pirates knew what floods were because of what my grandfather said back in 1903, you didn't build a house in a floodplain (inaudible.) And thank heavens you're not going to direct all the worst of the water onto the (inaudible) and destroy. I'm so proud of that.

MR. LEWIS: Jason Easton.

MR. EASTON: I want to thank the Corps and the County for the opportunity to speak, but also the opportunity to serve on the Flood Control Zone Advisory District, the longest acronym committee in the history of the County. As the vice chair of that said along with serving with Chairman Darrell here and other members that are here, we appreciate the opportunity to participate in this decision as they were being made not just to comment at the end.

And so, you know, as a resident of Anacortes -- and I apologize I didn't tell you where I was from. I'm from Anacortes. For 12 years I lived in Anacortes. For about eight years I've been involved in this issue. And like John

said earlier, I started out very skeptical about the GI study. Those who introduced me to being involved in this whole idea of understanding what GI even stood for, and what the Corps was doing and how all this flood stuff worked, we were very skeptical. And the amount of money that is spent to get to a point of finishing a study, does reinforce at times your skepticism.

I will say with respect to the Corps and the County, the resources were quite large. But the results today are better than what we had when we started. And if we implement what's being proposed, we're better than where we were today and where we would be 20 years from now. If we, like other communities, made the mistake of kicking this down the road again -- sometimes the enemy of perfect is good, sometimes the enemy of good is perfect. I think in this case our common enemy is the uncontrolled river at times, but also our common friend. It serves our agriculture community amazingly, serves us with amazing fish and wildlife systems, but it's also a challenge to figure out how to keep everyone protected and safe. We're close.

I'm not happy, I'm not extremely excited about what is going to happen to some of these areas. I'm concerned about how the Samish and the Skagit work together to make Highway 20 a real challenge at times. But remember when you protect Burlington and you protect Mount Vernon, you are

protecting the economics of the spoken wheel system in this community. Anacortes doesn't -- as they famously tell you, they don't sell socks in Anacortes. They buy them in Burlington and Mount Vernon. And so we continue to work together as a community, find ways to make this thing and improve this thing. We have a world-class drainage system and amazing agricultural system in an unbelievably beautiful place to live. But if we could do a better job of managing the river when it comes at us hard, we are in much better shape. Thank you.

MR. LEWIS: Okay. This is the last speaker I have on my list again. Certainly there is opportunity since there is time left. Oscar Lagerlund.

MR. LAGERLUND: Oscar Lagerlund, 19501 Dahlstedt Road, Burlington, Washington. I'm one of the expendables. I live in the Samish River flood zone. Don Nelson (ph) was the Flood Control Engineer for the County, some of you remember him, maybe us old-timers. Once again, I look around and I think I'm the oldest guy in the room. Some of you might argue with that, but if you don't know, I do a lot of hard work and drink a lot of milk and not much whisky.

So you said we will never flood the Samish and Skagit at the same time. Well, guess what. In 1990, we did. Both basins were full. The question is when you run it through that Samish Basin and it's full, what happens.

So the thing that -- I wasn't going to say anything, but then I'm thinking about the dairy farmers. And there's two dairies right where you're proposing to make the dike around Burlington and Industrial Park, and I'm thinking, okay, we're the expendables. Give us a chance to get out alive. Not me, but with the cows. Because I got called at 4:50 -- 4:30 in the morning in 1990, and it said evacuate. Have you ever tried to evacuate 600 livestock plus the guys that were down at the organic farm. I said, you know what, make them put the dike on the other side of the organic farms because everybody needs organic, the rest of us, they don't need it. And so those who can survive it, you get your dike on the other side of your farm which is right next Industrial Park. High value, right. What about a buffer for that high value stuff like you talk about buffers for habitats and salmon, and everything else. How about a buffer for a farmer in a flood zone.

Now I've been here a long time. These guys are young guys, got two sons with him, an organic farmer. I said, put your dikes way out there so when you get it, tell them you have to stay as an organic farm. So that when you get it, the dike built, then you can sell it for industrial because that was his alternative, to sell out.

So that's what a lot of things are looking at. (Inaudible). I fought to preserve egg land. A lot of you

know it (inaudible), the whole works. Now I'm asking myself for what. For habitat. My son says we are going to turn it all into swamp, we got the high spots, that's where we will build the houses. Well, that's what they already did. My ancestors sat on (inaudible) Bayview, looked out across the valley and said, oh, there's a high spot -- this is in the 1800s -- there's a high spot, there's a high spot (inaudible), house on it. Hopefully, we are sitting on a high spot where we have our farm, but we don't know because the Army Corps hasn't run a "where's the water going to run."

And the other thing is like John Roozen said, if we are going to take the water, help us get it out, because we don't have the structure to let it back out through the dikes. Thank you.

MR. LEWIS: Are there any other people that would like to speak? Okay. With that, I'll turn it back over to Lynn.

MS. WETLZER: Thanks everyone. Thanks Evan. Thank you everyone for your comments tonight. Just one last reminder about the formal comment period ending on the 21st of July. How to submit comments either written to the address here, via e-mail to the address here. You can also call the phone number on the screen, and there are comment forms that you'll pass on the table as you leave, as well as

business cards with the location of the document electronically. And it's also available in three libraries, as well as the Skagit County Office. So thank you for coming tonight, and thank you for your interest in this important project.

(End of public hearing at 7:41 p.m.)

CERTIFIED COURT REPORTER'S CERTIFICATE

STATE OF WASHINGTON)
) ss.
COUNTY OF SNOHOMISH)

I, Tara L. Cunha, CCR No. 3310, the undersigned Washington State Certified Court Reporter, pursuant to RCW 5.28.010, authorized to administer oaths and affirmations in and for the State of Washington, do hereby certify:

That the foregoing hearing of Skagit River General Investigation Project, Public Meeting was taken before me and completed on June 19, 2014, and thereafter was transcribed under my direction; that the typewritten transcript is a full, true and accurate translation of said hearing;

That I am not a relative, employee, attorney or counsel of any party to this hearing, or relative or employee of any such attorney or counsel or person, and that I am not financially interested in the said hearing or the outcome thereof;

IN WITNESS WHEREOF, I have set my hand in my office in the County of Snohomish, State of Washington, this 11th day of July, 2014.

_____

TARA L. CUNHA, CCR
Washington State Certified Court Reporter No. 3310, residing at Lake Stevens, Washington

From:	Mike Anderson
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit River GI Study
Date:	Tuesday, August 05, 2014 11:23:23 AM

Hannah Hadley

8/5/2014

I'm concerned about the transfer of risk of flooding from Mount Vernon and Burlington to Sedro-Woolley. We are "upriver' because our founders settled on higher and less vulnerable ground for flooding than Burlington. The answer to the big flood that will hit is to get the water out not push it back on others. There are costs to dikes just like a by-pass and pushing water up river impacts communities, schools, and farm land. Are we going to pay the people whose land gets impacted by this Urban Levy Plan just like we were talking about paying people for easement on the by-pass route? Works both ways.

I live and run a business called Sedro-Woolley Mini-Storage and pride ourselves being one of the few mini storages around that is not on flood prone land. People actually ask us about flooding and we've always been able to say we're good here and Burlington and some in Mount Vernon are in precarious locations. Now with this new Urban Levy Plan, Sedro-Woolley will be at more risk and Burlington will be looking good. That's not fair. I also owe mortgage on my property, will I be required by the bank to have to get flood insurance now since water will be pushed up to us? That's not fair, again. Flood insurance costs will affect Sedro-Woolley people's wallet monthly and real estate values. This is not fair to citizens of Sedro-Woolley. Get rid of the water not push it on someone else.

Dike District 12 of Burlington area is trying to raise their dikes right now, a smaller precursor to this Urban Levy Plan. From a Northwest Hydraulic Consultant report dated May 22, 2014, NHC project 200177. Page 5, last paragraph: "In summary, the project would eliminate levee overtopping within the project reach during the 100-year flood. A natural consequence of this type of partial levee improvements is decreased flooding behind the improved levee, and increased flooding elsewhere." – No brainer water backs up more upriver instead of flowing to sea. Get rid of the water, don't push it back on your neighbors.

In closing, I know Sedro-Woolley, Clearlake, upriver communities will fight having water pushed back on us. Why not do a project that gets rid of the water? Fund it with a small sales tax on the businesses that built in the flood prone areas like Mount Vernon and Burlington.

Glenn Michael Anderson

1024 Raby Lane

Sedro-Woolley, Wa 98284

360-856-0705

From:	Kevy Clevish
To:	NWS-Skagit-River-GI
Subject:	[EXTERNAL] Skagit river general investigation study
Date:	Tuesday, August 05, 2014 5:13:49 PM

I was shocked back when I read the study that the survey team would go so far as to dismiss all environmental and societal issues that the proposed comprehensive urban levy improvement plan would do to anyone up river to the suggested "fix". I live in the town of Sedro-woolley, wa and I think this is a very disrespectful tactic of coming up with a quick fix without doing all the research first; as to see what outcomes would follow.

How would all the People in my area get compensated for the voluntarily flooding of houses in a area that's never been flooded before? Including mine!

I like putting money into my community, but what's the point if your going to come along and ruin it? A dream of mine is to some day sell my house and buy a run down historic home in town and restore it to its former glory and live long term in it... How do you expect me to want to commit to something as labor intensive and expensive, in an area that wasn't in the flood plain but will be if you succeed with your plan, let alone the many other people with similar ideas of improving ones neighborhood? If people are not spending money in their neighborhoods and surrounding community everyone suffers.

If something like this nonsense goes through I just might move out of this county and support a different one who better takes care of the people supporting it.

Please contact me back with any future developments.
Thanks

SKAGIT COUNTY DIKE DISTRICT NO. 1
17208 BRADSHAW ROAD
MOUNT VERNON, WA 98273

August 5, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, WA 98124-3755

VIA EMAIL: skagit.river@usace.army.mil

Re: **Skagit County GI Study Draft FR-EIS – Public Comment; Skagit County Dike District No. 1**

Dear Ms. Hadley:

I am the Chairman of the Board of Commissioners of Skagit County Dike District No. 1 (the "District"), and on the District's behalf, I make the following Comments regarding the Skagit River GI Study Draft Feasibility Report and Environmental Impact Statement.

I. BACKGROUND

Dike District No. 1 manages flood protection operations in its district in Skagit County. DD1 provides flood protection for the City of Mount Vernon, west of the Skagit River, as well as other outlying County areas. The Dike Districts located in Skagit County have statutory duties and powers as Special Purpose Districts and play a vital role in flood protection of hundreds of millions of dollars of property value and over 110,000 Skagit County residents. The Districts also deal with debris in the river, and issues relating to river contamination, erosion, fish habitat, and numerous other environmental issues included in District operations and maintenance.

Dike District No. 1 is also a member of the Skagit County Dike and Drainage District Flood Control Partnership which is a group of five Dike Districts, including Skagit County Dike District No. 1, 3, 12, 17, and 22. The Districts are continually involved in maintenance, prior to flood season in October, November and December of each year, along with flood-fighting efforts during high water in these months. The rest of the year is spent performing maintenance activities, and construction projects.

There can be no greater single impact on life and property, than management of the river to control a catastrophic flood. A catastrophic flood will destroy every other program, management practice, or effort to maintain environmental features or habitat. A catastrophic flood will sweep away everything in its path, will inundate aquatic resources, contaminate water systems, submerge sewage treatment plants, farms, chemical and petrochemical facilities, and introduce human waste, chemicals, gasoline and oils, and toxic materials into otherwise clean waters.

Toxic flood waters will destroy water quality and aquatic resources. There is no more important endeavor than to protect life, property, the environment and habitat from the ravages of floods.

The DD1 Commissioners are in support of this GI Study proposal with selection of the CULI, Comprehensive Urban Levee Improvement. The District has worked with the Cities of Mount Vernon and Burlington and with Skagit County for many years in support of the GI Study. The District complements the Corps for the diligent work and effort, which appears to be bringing the study to completion over these past many years.

A significant advantage of the current study proposal is that it finally represents a detailed county and system-wide proposal for reducing flood risk, life safety threats, and damages to the Skagit River Basin as a result of flooding. The Skagit River Basin experiences frequent floods, of minor to major intensity, resulting in substantial damage to the community and putting at risk urban and rural infrastructure and economic activities of the Skagit County.

The study has examined more than 20 different measures over the last 15 years including structural and nonstructural options, which have culminated in the current Draft Feasibility Report and selection of the CULI. The selection of the CULI Alternative was determined to be the most viable and cost-effective project to meet the objectives of reducing flood risk to life safety. All of the other action alternatives, including three which would have provided similar levels of flood protection at the 100 year level, were determined to have considerably higher construction costs, real estate costs, or greater environmental impact. The CULI Alternative is the least problematic as far as environmental compliance, and provides the most protection for the greatest population in the Skagit River Basin. It would also be the most likely to receive federal funding.

Although this is still a Draft Feasibility Report, it appears to be a solid step forward to provide protection to the greatest number of people and the largest geographic area, both urban and rural, and with the best cost-benefit ratio. More importantly, from a local standpoint, this is a system-wide approach which appears to provide several proposals for flood protection for various other Districts and municipalities. In that regard, Dike District No. 1 supports the Skagit River GI Study Draft Feasibility Report and Environmental Impact Statement, with the following comments, concerns, and additional considerations.

II. COMMENTS, CONCERNS, AND ADDITIONAL CONSIDERATIONS

Dike District No. 1 supports the effort to move forward with the Comprehensive Urban Levee Improvement Alternative (CULI). As noted on pages 48-51, the CULI provides not only for improvements and work within Dike District No. 1, but also provides many other system-wide improvements and County-wide benefits: 1) a flood wall or ring dike around United General Hospital, 2) ring dike and the flood wall at the Sedro-Woolley Wastewater Treatment Plant, 3) improvements at the Three Bridge Corridor, 4) improvments in the area of Dike District 17, 5) a riverbend cut-off levee and crossing, 6) a Lions Park connector, 7) a flood wall in Dike District 3, and 8) raising of the levee with installation of a floodgate in Dike District 1.

The CULI also provides for other beneficial structural and nonstructural components: 1) BNSF railroad crossing improvements, 2) debris management of the river bridges, 3) work on evacuation routes, 4) outlook structures in sea dikes, 5) installation of additional gauges, 6) flood warning systems, 7) real estate acquisition, 8) relocation of structures, elevation of structures, and flood proofing of buildings.

The Draft Feasibility Report and CULI are therefore a major step towards providing for a system-wide, comprehensive program of flood protection measurements throughout the County and throughout several Districts and municipalities, that might not otherwise be possible to coordinate. When funding is obtained, it is expected that a substantial amount of federal funding would be available for use by the numerous entities on these projects. This would significantly reduce the cost to the local sponsors, who would likely pay a 35% share with the federal government paying 65%, or some other percentage of cost sharing to be determined.

The result of rejecting the study and CULI would be to deprive Skagit County, Districts and municipalities of potentially millions of dollars in federal funds, and a system-wide plan of flood risk protection, for all of the residents, cities, and rural and urban areas in Skagit County. This study provides funding for a framework of mutual benefit for many entities in the County, with critical life and safety implications for its constituents. Lack of teamwork, cooperation, and rejection of this plan will only serve to drive away federal funding, federal assistance, and protection that the people of Skagit County need. This provides an inclusive framework for all entities to work together to resolve differences and complaints to achieve a plan that works for everyone.

The proposed plan will provide both Rural and Urban levels of protection. DD1, being mostly rural, is therefore concerned that their entire District continues to receive at least the current level of protection, without landowners being burdened by additional flood waters in a flood event. DD1 believes this must include raising the District levees proportionally to the proposed increases in river stage that will occur throughout the rest of Dike District No. 1.

The District supports the proposals in the Feasibility Report for raising the levees and adding a floodgate at pages 38-41. However, it appears that further information is needed regarding floodgate specifications and that hydraulic analysis will be required to determine the effects of the project on the District in times of flooding. The CULI Alternative modeling and design needs to further clarify when the proposed Westside floodgate would be used and how this would affect flood levels in Dike District No. 1. Dike District No. 1 is concerned that the purpose of the floodgate would be to release additional waters into the Westside Mount Vernon. Criteria for use of the floodgate needs to be clarified and the impact of its installation and use needs to be carefully studied and considered before plan approval.

It is important to DD1 that additional analysis and study be undertaken to quantify the extent of flood effects on DD1 and proposals to protect DD1 from damages before study approval. All parties need to work together to control and manage risks in their community in the framework of this plan and obtain from residents of DD1 the best flood protection possible for any level of flooding below and including the 100 year level.

Another significant and ongoing issue for Dike District No. 1 is the bridge approach as the SR 536 roadway intersects with the Westside Mount Vernon Bridge. The roadway at the bridge approach intersects the levee perpendicularly, below the levee crown, creating a "notch" in the levee. During flood events, it has been necessary for the Dike District to fill in this "notch" with an earthen berm to maintain the integrity of the levee system, and to prevent flooding of Westside Mount Vernon and farmland from Mount Vernon to La Conner. The resulting problem, however, is that the roadway is completely blocked and the entire community of west Mount Vernon is isolated from access and cut off from all urban and community services. The residents of Westside Mount Vernon remain isolated until the floodwaters recede and the "notch" is reopened. Correcting this condition would require modifying the approach or bridge structure to span the west end of the existing bridge to the top of the levee with addition of a culvert-type structure to pass flood flows. Further engineering and analysis is needed, which may provide other beneficial options. This matter has been previously discussed with WSDOT, but funding has not been available. The GI Study and CULI present an opportunity for funding and getting WSDOT involved in planning a fix and discussing potential alternatives

The CULI Alternative modeling and design also needs to carefully consider potential seepage issues resulting from a proposed enlarging of the levee structure. Underseepage and/or appearance of sinkholes or sand boils have been observed on landward properties in areas along Dike District No. 1's levees. Specifically, issues have been observed in prior years at Jackpot Lane and along Moores Garden Road, in the areas of RM 14 and RM 15 as shown on Figure 3-12, page 48, of the draft FR-EIS. To avoid potentially aggravation of seepage issues in those areas and to ensure that those levees hold in a flood event, it is critical that the CULI incorporate seepage berms, widening of the levee, or installation of sheet piling, at least in areas of concern, to ensure that proper protection is provided. Where widening the levee or installing a berm is not feasible, the CULI should incorporate sheet piling as needed to strengthen the levee structure and prevent underseepage issues. It of course would not make sense to raise the levee structure only to have it fail due to increased seepage through the levee. A comprehensive analysis needs to be provided in that respect.

As a related matter, the District would also urge that both upstream and downstream drainage issues be addressed in further details in the study. The District being downstream from the proposed improvements at Dike District No. 12 will receive more waters by virtue of being downstream, as will Districts downstream of DD1, and when flooding occurs, it is important that flood waters be drained from property as soon as possible to protect farmland, and rural and agricultural areas. More analysis is needed to determine the flood effects on DD1. DD1 would urge that proposals for improvements in benefits to drainage both up and down the river be further addressed by the Corps in this study and provided within this system-wide framework for flood protection.

Finally, there is concern amongst the Districts that the estimated construction window of 2 years is not realistic. Typically, levees are not worked on during the flood season nor are the existing levee soils able to be worked on in the winter months. Typically we have a two to three month work window each summer to do our levee work. A more realistic construction window to accomplish the improvements should be included in the EIS.

The District Commissioners otherwise support and urge adoption and approval of the Draft Feasibility Report and EIS and final approval of the CULI, consistent with the above comments, concerns, and considerations.

If you have any questions in that respect or wish to discuss further, please feel free to call. We would also invite you to join us at any of the District's meetings, which are typically held the third Thursday of each month.

SKAGIT COUNTY DIKE DISTRICT NO. 1

By: _____
Bob Junquist, Commissioner/Chairman

SKAGIT COUNTY DIKE,
DRAINAGE & IRRIGATION
DISTRICT NO. 12
1317 S. ANACORTES STREET
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P: (360)757-3484

August 4, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, WA 98124-3755

VIA EMAIL: skagit.river@usace.army.mil

Re: **Skagit County GI Study Draft FR-EIS – Public Comment; Skagit County Dike, Drainage and Irrigation District No. 12**

Dear Ms. Hadley:

Please accept these public comments by Commissioner Lorna Ellestad, Commissioner Eddie Tjeerdsma, and Commissioner John Burt for Skagit County Dike, Drainage and Irrigation District No. 12 ("DD12") regarding the Skagit County GI Study Draft FR-EIS. These comments are in addition to and supplemental to the comments made at the public meeting on June 13, 2014, by Dan Lefeber, District Operations Manager, and John Shultz, Attorney for the District.

I. BACKGROUND

Dike District No. 12 is responsible for managing diking, and flood protection operations in its District in Skagit County. DD12 provides protection for the entire City of Burlington, and outlying areas in Skagit County. The District has statutory duties and powers pursuant to state law, and a vital interest in flood protection for public health and safety. DD12 provides protection for over 110,000 residents in Skagit County, and hundreds of millions of dollars of property value. The District also deals with issues relating to flood damage repair, maintenance, erosion, river debris, fish and endangered species habitat, and numerous other environmental issues.

The District is also a member of the Skagit County Dike and Drainage District Flood Control Partnership which is a group of five Dike Districts, including Skagit County Dike District No. 1, 3, 12, 17, and 22. The Districts are continually involved in maintenance, prior to flood season in October, and November of each year, along with flood-fighting efforts during high water in these months. The rest of the year is spent performing maintenance activities, repairs and construction projects.

There can be no greater single impact on life and property, than management of the river to control a catastrophic flood. A flood will destroy every other program, management practice, or effort to maintain environmental features or habitat. A catastrophic flood will sweep away everything in its path, will inundate every aquatic resource, and will contaminate water, submerge sewage treatment plants, farms, chemical facilities, and will introduce human waste, chemicals, gasoline and oils, and toxic waste materials into otherwise clean waters. Lakes

and fields can be covered by a toxic flood of water which will destroy water quality and aquatic resources. There are few more important endeavor than to protect life, property, the environment and habitat from the ravages of floods.

The DD12 Commissioners are in support of this GI Study proposal with selection of the CULI, Comprehensive Urban Levee Improvement. The District has worked with the City of Burlington and Skagit County for many years in support of the GI Study. The District complements the Corps for the diligent work and effort which appears to be bringing the study to completion over these past many years that the study has proceeded. In the interim, the District has worked closely with the City of Burlington for the project which will be included in the CULI. A significant amount of related levee and flood protection work has preceded this proposal, for which DD12 is currently moving through the permit process with the City of Burlington and Skagit County.

The significant benefit of this current study and the CULI proposal is that it finally represents a detailed county and system-wide proposal for reducing flood risk, life safety threats and damages to the Skagit River Basin as a result of flooding. The Skagit River Basin experiences frequent floods, of minor to major intensity, resulting in substantial damage to the community, urban and rural areas, and the infrastructure and economic activities of the Skagit County.

The study has examined more than 20 different measures over the last 15 years including structural and nonstructural to reach the current Draft Feasibility Report and selection of the CULI. The selection of the CULI Alternative was determined to be the most viable and cost-effective project to meet the objectives of reducing flood risk to life safety. Other action alternatives, including three which would have provided similar levels of flood protection at the 100 year level, were determined to have considerably higher construction costs, real estate costs, or environmental impacts. The CULI turned out to be not only the most cost-effective plan to reduce flood risk, but was also the plan which resulted in the least impact to environmental compliance, and provided the most protection for the greatest population in the Skagit River Basin. It would also be the most likely to receive federal funding.

Although this is still a Draft Feasibility Report, the CULI is the best step forward to provide protection to the greatest number of people and the largest geographic area, both urban and rural, and with the best cost-benefit ratio. More importantly, from a local standpoint, this is a system-wide approach which provides numerous proposals for flood protection for various other Districts and municipalities.

As noted on pages 48-51, the CULI provides not only for improvements and work within DD12, but would also provide many other system-wide improvements, including: 1) a flood wall or ring dike around United General Hospital; 2) a ring dike and the flood wall at the Sedro-Woolley Wastewater Treatment Plant; 3) work at the Three Bridge Corridor; 4) work in the area of Dike District 17; 5) a Riverbend cut-off levee and crossing; 6) a Lions Park connector; 7) a flood wall in Dike District 3; 8) raising of the levee with a floodgate in Dike District No. 1.

Also, there would be other structural and nonstructural components. These include: 1) BNSF railroad crossing improvements; 2) debris management of the river bridges; 3) work on evacuation routes; 4) outlet structures in sea dikes; 5) installation of additional gauges; 6) flood warning systems; 7) real estate acquisition; 8) relocation and elevation of structures, and flood proofing of buildings.

Although no plan is perfect and there are no guarantees in life, this is a major step towards providing for a system-wide, comprehensive program of flood protection measurements throughout the County and throughout several Districts and municipalities. Further, although funding may be difficult, when any funding is obtained, this will be a substantial amount of federal funding which can be used by the numerous entities in the County on these projects. This would significantly reduce the cost to the local sponsors, who would likely pay a 35% share with the federal government paying 65%, or some other percentage of cost sharing to be determined.

Reviewing these factors, and looking at this study in light of a system-wide project for the entire Skagit River Basin, there would appear to be much to like about the study. Although there may be detractors, criticism, and resistance by various groups to the plan, we know that not moving forward and rejecting approval of the study could have disastrous consequences. The result would be to deprive Skagit County and municipalities of potentially millions of dollars in federal funds, and a system-wide plan of flood risk protection, for all of the residents, cities, and urban and rural areas in Skagit County.

This study provides funding for a framework of teamwork and mutual benefit for many entities in the County with important and critical life and safety protection for all residents. A lack of teamwork, cooperation, and rejection of this plan will only serve to drive away federal funding, federal assistance, and protection that the people of Skagit County need. This plan provides an inclusive framework for all entities to cooperate and to work together to resolve differences and complaints to achieve a plan that works for everyone.

II. PRACTICAL AND ADDITIONAL SYSTEM-WIDE RECOMMENDATIONS FOR APPROVAL AND IMPLEMENTATION OF THE CULI

A number of practical and system-wide recommendations would be beneficial in implementing the CULI. These include structural and non-structural proposals as well as suggestions for cooperative efforts by individual entities to obtain the full advantage of the CULI:

1. Existing organized drainage and dike districts should be recognized as critical elements of the CULI and consulted accordingly.

2. Ongoing or proposed District or City flood reduction projects consistent with and compatible with the CULI should be identified as such and supported by County, State and Federal agencies for the County, regional and national benefits they provide.

3. Existing levels of protection should be maintained and managed as part of the CULI. Operation of any system wide evacuation measures should include "triggers" that allow for the maintenance of the existing level of protection during lesser events for those areas identified as receiving increased risk by this alternative. Improving protection levels in some areas should also be considered as compatible with the CULI if managed appropriately. It is unclear to DD #12 how the CULI addresses current flood fight operations in Sterling and other areas.

4. Overland flow modeling should be completed and potential outlet structure locations identified before the CULI is finalized and put forward for authorization. Multiple project benefits should be considered during this process with improving existing drainage a priority.

5. County annual road maintenance should be evaluated to insure that all existing road surface elevations are currently or will be modified to be consistent with westerly conveyance requirements of projected flood waters as part of annual road maintenance and other transportation improvement projects. Planning, design and implementation of strategically located "swales" should be constructed as part of all County road resurfacing maintenance beginning immediately. One example of the impact of the ongoing practice of adding material to road surfaces during routine road maintenance on overland flow of flood waters is Chuckanut Drive. The impact on the flooding situation in Allen by the increase in the road surface elevation from the continued resurfacing of Chuckanut Drive was resolved years ago by an agreement with Washington State Department of Transportation (WSDOT) to maintain specific road surface elevations as required so as not to increase flooding in Allen and to facilitate the westerly conveyance of overland flood waters. The need for the installation of adequately sized and strategically located "at grade" swales in all roads perpendicular or within identified flow corridors will be acerbated by the adoption of the Comprehensive Urban Levee Improvement Alternative (CULI) and should be included as a significant part of the proposed alternative.

6. All forms of Baker River storage should be included as part of the CULI including 'imminent flood" drawdown. Storm predictions are becoming increasing more accurate and provisions for including significant "draw down" of all reservoirs within the Baker and Skagit systems should be included as part of any flood damage reduction strategy. Evacuating as much water as possible in advance of any high flow event saves not only constructed storage but also natural storage within the basin for attenuation of peak flows.

7. Early warning actions such as financial support of USGS gauging systems and flood preparedness training and coordination should be identified as non-structural support for the CULI and associated costs treated as match.

8. Potential "Early action" projects such as protection of United General Hospital, Sedro Woolley Waste Water Treatment Plant and Improvements to HWY 9 that have been

included as part of the CULI with increased risk from the CULI should update construction designs and continue to move forward. Funding and construction of these and other projects recognized as CULI elements should be included in project costs and qualify as local match if completed within 5 years of initiation of construction of the CULI

9. Washington State Department of Transportation infrastructure planning should be consulted and referenced in the CULI and designed to be consistent with the increased risk from the CULI. Funding and construction of WSDOT transportation improvements within the CULI project area should be recognized as CULI elements and all project costs should qualify as local match if completed within 5 years of initiation of construction of the CULI.

10. Any Agricultural or other conservation easements strategically located to prevent development within any conveyance corridors within the CULI project area should be recognized as CULI elements and all costs should qualify as local match if completed within 5 years of initiation of construction of the CULI.

11. Any and all costs associated with elements identified within the CULI or that are designed to function as supporting an element within the CULI should qualify as project match. This is especially true for any ongoing County or District maintenance activities that are currently consistent with or are modified to be consistent with the CULI alternative purpose.

III. ENGINEERING ANALYSIS AND CONCERNS

There are also concerns based on engineering analysis and recommendations for implementing the CULI, and coordinating the plan with local and County entities. These include structural and non-structural elements and recommendations.

DD12 will serve both Rural and Urban levels of protection under this plan. The Rural areas are both upstream and downstream of the City of Burlington Urban area. Limitations in this plan as to how and why the District will provide different levels of protection to their constituents needs to be more clearly communicated by the Corps and County. DD12 is very concerned that their entire District continues to receive the current level of protection and to at least the same height of their existing levee system. DD12 believes this should include raising the downstream levees proportionally to the proposed increases in river stage that will occur through the three bridge corridor.

DD12 has both river levees and bay dikes. This CULI, to provide a higher level of protection to the Urban areas, needs to also include both the structural and non-structural components to get the flood water out of the Bay Dikes for the flood events above 4% when overtopping of the Rural levees will occur. This plan should include the frame work for coordinating this plan with the local District and County plan and planning components.

By not including hydraulic modeling on the CULI in the Draft Feasibility Report and Environmental Impact Statement, it becomes somewhat difficult to comment because we do not know the actual effect on different areas within our District. Fortunately, DD12 has had modeling done on the portion of the Burlington Urban Levee included in the Final Environmental Impact Statement published in July 2010 as a Co-Lead to the City of Burlington. DD12 has also had this modeling updated in May 2014 to the current GI study hydrology and hydraulics. DD12 would need to have input on the final location and placement of the Burlington Hill Cross Levee and the associated Gages Slough Culvert and Burlington Hill Flood Gate. How the new tieback levee to Burlington Hill affects the Rural portions of the District both upstream and downstream is still very important to DD12.

The CULI Alternative modeling and design needs to include the levee improvements required to provide the Rural level of protection to the Sterling area between the Burlington Hill Cross Dike and United General Hospital. Flood fight currently occurs along the top of the BNSF railroad. DD12 needs to know at what height a levee improvements along the south side of this RR needs to be constructed to continue to provide this portion of their District the current level of protection. This evaluation should also include whether or not this levee should be located along the south side of the houses along the south side of Lafayette Road or along the current RR embankment.

DD12 also needs to know what level of protection will be provided by the ring dike around United General Hospital. Will this be at the 1% flood or to the higher Urban 0.4% protection proposed for the City of Burlington?

As a part of the study and design leading up to the July 2010 EIS by the City of Burlington and DD12, geotechnical borings and design work concluded that higher setback levees, while leaving the current levee in place within the three bridge corridor, may be a better alternative for both construction cost and maintenance. DD12 wants to make sure that the CULI does not restrict the use of setback levees in this corridor to accomplish the proposed level of protection.

The estimated construction window of 2 years is not realistic. Typically the levees are not worked on during the flood season nor are the existing levee soils able to be worked in the winter months. Typically we have a two to three month work window each summer to do our levee work. A more realistic construction window to accomplish the improvements should be included in the EIS.

On one of the many pages that are number 38, the text quotes that the Urban reaches of Mount Vernon and Burlington account for approximately 46% of the total Expected Annual Damages (EAD). Table 3-5 on this same page indicates that Burlington alone accounts for approximately 38% of the total expected damage. This includes 69% of the Commercial, and 39% of the Industrial. Protection of these community economic resources to the 0.4% of the Annual Chance of Exceedance (ACE) is very important to all of the Skagit community.

IV. ADDITIONAL COMMENTS AND CONCERNS

Extensive engineering and hydrology have been done for the portion of the project for DD12 which will be included in the CULI. Models and analysis have been done using the 100 year flood standard. Areas upstream and downstream of the project were analyzed for the effects of the project on the increase of depth and floodwaters resulting from the project. This has been outlined in submittals from the City of Burlington, and the project engineer. These studies show that at the 100 year level, the project would result in increased water levels, of less than a few inches.

It should be noted, however, that this is almost an inconsequential increase, from the project, in the context of the 100 year flood level causing floodwaters of 10-15 feet. The point is that the consequences of a 100 year flood are devastating, and will inundate nearly all areas in the County, and any increase in water surface levels is inconsequential. Accordingly, all parties need to work together to control and manage risks in their community in the framework of this plan and obtain from our residents the best flood protection possible for any level of flooding below the 100 year, keeping in mind that the 100 year flood would be catastrophic in proportion.

As a related matter, and in line with the objective of teamwork within the framework of this proposed CULI, the District would also urge that both upstream and downstream drainage issues be addressed in further details in the study. The District's representatives had made these comments at the public hearing and reiterate the same here. District's downstream of DD12 and DD1, will receive more waters simply by virtue of being downstream, and when flooding occurs, it is important that once the water floods farmland and other areas, that it be drained from the property as soon as possible to protect farmland, and rural and agricultural areas.

This holds true in areas north and west of Burlington, as well as downstream areas including Fir Island and other Districts. Presumably other diking and drainage districts will be submitting comments for benefits and improvements in their area to be incorporated in this study. In any event, DD12 would urge that proposals for improvements in benefits to drainage both up and down the river be further addressed by the Corps in this study and provided within this system-wide framework for flood protection.

The Commissioners of DD12 appreciate the extensive and forward-looking plan adopting the CULI in the GI Study. The District Commissioners urge adoption and approval of the Draft Feasibility Report and EIS and final approval of the CULI, consistent with and including the above comments, engineering analysis, and recommendation. Please call if you have any questions or wish to discuss the above.

SKAGIT COUNTY DIKE, DRAINAGE AND
IRRIGATION IMPROVEMENT DISTRICT NO. 12

By: Eddie Tjeerdsma

Eddie Tjeerdsma, Commissioner/Chairman

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
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Seattle, WA 98124

Comments to
Proposed Skagit River Flood Risk Management
General Investigation
Skagit County, Washington
Draft Feasibility Report and
Environmental Impact Statement
Tentatively Selected Plan (TSP): Comprehensive Urban Levee Improvement (CULI) Alternative

July 17, 2014

The Samish Basin, similarly to the Skagit Basin, is comprised of some of the most productive farmland in the state of Washington and produces a similar array of agricultural crops and livestock. The Samish River has a modest diking system completed in the mid 1980's on the lower reaches that is scaled to manage only Samish River flows. The Samish River dikes have experienced dike breaks since construction- the most notable were during the floods of 1990 and 1995. The last time a Skagit River flood impacted the Samish Basin was in 1921 and was attributed to a dike break at Burlington. The interior basin has several drainage districts: Drainage & Irrigation District 14, 25, 16, 5, and 18. There are several dike districts: Dike District 25, 5, 19, and 4. The greater Samish Delta/agricultural area is strongly influenced by tidal pressure as its elevation ranges from slightly below sea level to approximately twenty feet. The districts are organized by their natural topography relative to drainage outlets. The over-all elevation differential within the drainage district's boundaries is negligible - relatively flat - which exacerbates timely surface, storm and flood water drainage especially considering the limited number of interior drainage outlets coupled with strong tidal influence which is mainly a single tide cycle during the rainiest times of the year. With the increase in upland development, surface water management within the lower basin has become more challenging and has resulted in increased pumping to augment tide cycles. The timely removal of surface waters is of paramount priority to the drainage districts and agricultural crops.

We are writing to express concerns and objections to the Comprehensive Urban Levee Improvement (CULI) Alternative (TSP), specifically the impacts to the rural and agricultural areas north and west of the project area, particularly the Samish Basin. We strongly believe the proposed CULI does not adequately consider or appreciate the inadequacy of the present drainage systems to effectively handle additional flood waters from the Skagit River let alone the occasional floodwaters from the Samish River. Furthermore, the Samish River diking system is greatly incapable of handling the Skagit River flood waters and will experience over topping and damage to its fragile infrastructure. There is a serious lack of flood water return gates within the basin as a whole. The basin is struggling with that very issue for

dealing with the annual rainwater events and will likely be looking at increasing interior drainage outlets in the near future.

It appears that drainage issues will be "determined later" at the feasibility stage but to those of us familiar with permitting basic drainage maintenance and necessary repairs, this is a red herring. The fact is it takes years and intense negotiation to maintain existing infrastructure. The systems are over-due for upgrade and augmentation yet the path to implement improvements is blocked by permitting and various environmental review processes. In order to implement the TSP it is necessary for the drainage facilities and possibly some of the Samish diking systems to be upgraded but there is no discussion on how that may happen. Waiting until a flood happens or after the project is built is too late. We are already behind schedule in a real sense. It would appear that the Flood Control Act of 1962, section 209 could be a path to additionally augment the drainage infrastructure along with this project:

> *Flood Control Act of 1962, Section 209: "The Secretary of the Army is hereby authorized and directed to cause surveys for flood control and allied purposes, including channel* **and major drainage improvements**, *and floods aggravated by or due to wind or tidal effects, to be made under the direction of the Chief of Engineers . . . "...Puget Sound, Washington, and adjacent waters, including tributaries, in the interest of flood control, navigation, and other water uses and related land resources."*

The plan is silent, or at best alludes to the feasibility phase, about post flood recovery for the rural areas. The concern that *"Flood fighting may affect the performance of the CULI Alternative if activities confine flood flows and allow for more water to reach downstream areas where levees could be at risk of overtopping and failure which include the urban centers protected by this alternative"* suggests there will no longer be any attempts to minimize flooding as long as Burlington stays dry. This is unacceptable to the rural property owners and flies in the face of the idea that everybody will take a little bit of water. The reality appears to be the rural people will get wet and more often while Burlington in general will stay dry. What is so disreputable about this notion is that the City of Burlington was advised many times over many years to avoid siting valuable infrastructure and commercial enterprises in the most vulnerable areas for flooding and to leave the area surrounding and including Gages Slough available for flood waters. That advice was ignored and now the rural citizens will pay the price. There was opportunity to explore and utilize creative uses of pervious and semi-pervious surfaces and selectively locating and elevating structures while utilizing the vast acreages of parking lots as drainage basins. Instead it seems people think farmland can soak up the flood waters instead. Farmland can only do a part but not all of the accommodating. The desire of the urban areas to become free of purchasing flood hazard insurance is a selfish folly.

The plan needs a great deal more detail on the frequency and depth of the potential flooding to the rural areas especially as a result of the deflection dike built to the north and around the Burlington industrial park. It appears the industrial park buildings are already up on elevated pads so one wonders why the need to dike them in and we suggest omitting this section of dike entirely. How often will the flood gates at highway 20 and the railroad be closed? The plan, in an offhand way, mentions throughout the document uncertainty to the rural areas outside the Skagit dikes:

- *Specific risk and uncertainty remaining includes the extent of potential induced and transferred flood risk resulting from confined flood flows with larger and more robust levees to areas in the northern Skagit River floodplain, including the Nookachamps-Clear Lake area and Sedro-Woolley, and downstream below Mount Vernon.*

- *. . . Structural measures such as low elevation berms and improvements to interior drainage and sea dikes, can be evaluated on an incremental basis to reduce induced and/or residual flood risks once the risk is better understood.*

- *. . . Residual risk is still of concern for much of the rural floodplain, including cropland. Many critical structures remain in the floodplain or would become isolated during floods. Nonstructural measures such as updating evacuation plans and routes will be considered during feasibility-level design.*

- *The northern floodplain may experience an increase in floodwaters spreading across the Samish River near Edison; thus this area could have an adverse impact to public health and safety.*

Experience has proven that waiting until "later" to take on a fundamental task such as the interior drainage improvements is a foolhardy plan of action. The interior drainage must be an integral part of the entire package and not relegated to a nebulous date in the future. Understanding this is a draft proposal with some of the elements still at the conceptual stages, it is still prudent to include some strategies for removing the inevitable flood waters. Consultation with the aforementioned drainage and diking districts within the Samish Basin, particularly the inundation areas, must take place before the plan goes forward any further. There needs to be some level of certainty for the interior drainage infrastructure especially since it is often now and in the future will be taxed to carry more flood waters and potentially more surface waters with the advance of climate change toward rainier winters and springs. The drainage districts' tax base cannot continue to carry the ball for increased surface water inundations and flood waters.

The over-all transfer of risk from the Burlington urban area to the eastern areas of Sterling, Nookachamps, Clear Lake and to the north and west into the Samish Basin is unacceptable. The plan has determined 16,000 persons will be removed from flood risk but is silent on how many rural people will be inundated other than to say the risk is somewhere between 0 and 100%.

The TSP itemizes certain industries but completely omits obvious agricultural infrastructure that are dotted throughout the Samish Basin: several potato warehouses and packing facilities, a frozen and fresh fruit processing plant, several grain handling and storage facilities and several dairies and livestock operations. The TSP cherry picks certain public facilities but is silent on those located in the rural impacted areas. The fire hall at Allen becomes isolated during a flood and there are at least two elementary schools within the area that would be affected. There is also a community grocery store at Allen and numerous small businesses in Edison to name the most obvious. These facilities all have value but the plan is silent on the impact to them because it categorically lumps everything outside Burlington and Mount Vernon as generic and expendable, rural. It is NOT expendable and is of equal importance to the fiscal well-being of Skagit County. The plan lists major employers and is again silent on the number employed by the agricultural sector.

We question the statement "removes from the flood plain". The urban areas are not without risk and are still within the flood plain. What will change is the insurance rating but that risk and cost is shifted to the rural area without financial compensation.

The notion that everyone will take some water does not offer enough comfort to the rural areas. Our flood risk seemingly does not change from doing nothing but could be worse with the TSP. A discussion is missing on how the county portion of the cost for the project will be capitalized throughout the county: Will it be pro-rated? Will there be a reduction of property taxes according to the risk? Will landowners be compensated for diminished valuations due to increased flooding? Will property owners be compensated for flood damages? Will FEMA now put more restrictions upon the rural property owners? These questions are not offered to derail a robust flood plan but are very important to the rural property owners.

We respectfully request additional comment time beyond 45 days. There needs to be community meetings in the effected rural areas outlining the risks and coordination with the drainage and diking districts. The plan's somewhat conceptual nature makes some details hard to determine without additional time for research and discussion.

Sincerely,

Ryan Nelson Drainage & Irrigation district #5

Gerald Chelan Gerald E Nelson Ditch + Drainage Dist #2

Roger Knutzen Roger KNUTZEN DD # 14

David Lohman David Lohman DID #16

Norm Hoffman NORM HOFFMAN DDI #5

Lyle R. Wesen LYLE R. WESEN DID #18

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
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Lacey, Washington 98503

AUG - 5 2014

In Reply Refer To:
01EWFW00-2014-CPA-0031

Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Hadley:

In June of this year, the United States Army Corps of Engineers – Seattle District (Corps) solicited public comments on the draft Feasibility Report and Environmental Impact Statement (FR/EIS) for the Skagit River Flood Risk Management General Investigation (GI). This letter provides comments on behalf of the United States Fish and Wildlife Service (Service) and reflects similar concerns raised by the Swinomish Indian Tribe, Upper Skagit Tribe, National Marine Fisheries Service, Environmental Protection Agency, Washington Department of Fish and Wildlife, Washington State Department of Ecology, and other stakeholders during meetings and other communications.

We appreciate the opportunity to provide comments on the draft FR/EIS and on the project proposal. As you know, flood risk reduction is a top concern among many communities across the United States, including the communities living in the lower Skagit River basin. The root cause of flood risk in the lower Skagit is clear. Over 20 miles of this large river have been tightly confined by levees with little to no setback from the river. Such configurations usually decrease flooding from smaller, more frequent flood events. However, they often increase flood risk and damages from larger, less common events that pose a risk of overtopping the levees. The communities that have grown behind the levee walls understandably want better protection from such large events.

The Skagit GI seeks to reduce flood risks in the lower Skagit River watershed, particularly for the cities of Mount Vernon (2010 census population 31,743) and Burlington (2010 census population 8,388). Outside of these developed areas, the lower Skagit River watershed is used almost exclusively for agriculture, a vital sector of the local economy. This area is a broad, flat floodplain and river delta that was predominantly estuary, saltmarsh, freshwater wetlands, and floodplain forest prior to Euro-American settlement. Extensive diking and levee building since the early twentieth century have provided flood control and allowed conversion of these lands to their present-day uses. Additional flood control has been provided by several reservoirs in the upper watershed, including but not limited to Lake Shannon and Baker Lake.

The Skagit River supports a wide variety of fish and wildlife species that is unparalleled in the region. The importance of the Skagit River to the regions fish and wildlife resources cannot be overstated. It is the only river in the region that supports relatively abundant, self-sustaining populations of all five Pacific salmon species. The river supports three fish species currently listed as threatened under the federal Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (ESA), including: the most abundant run of Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*); the largest population of bull trout (*Salvelinus confluentus*) in western Washington; and, Puget Sound steelhead (*Oncorhynchus mykiss*). Historically, the Skagit River delta was the largest in Puget Sound and provided important habitat for native fish, shorebirds and waterfowl. The agricultural areas are still an important wintering area and stopover on the Pacific Flyway for migrating birds.

However, human impacts in the floodplain and delta have had substantial deleterious consequences to species, their habitat, and habitat-forming processes. The existing levee and dike systems have drastically reduced floodplain connectivity, diminished side channel and off-channel fish habitat, decreased distributary and tidal channels in the estuary, decreased riparian forest vegetation, increased water velocities, altered sediment transport, and limited the ability of the river to retain large woody debris. Main channel pool habitat and spawning habitat are almost non-existent. These impacts are important contributors to suppressing species abundance, and threaten long-term recovery and rebuilding efforts. The Skagit is thus at a critical juncture. This area and the habitat it provides cannot endure continued and additional permanent degradation if threatened and other native fish species are to be conserved in any reasonable numbers.

The scope of the GI and the draft FR/EIS is large in scale. The Skagit GI proposes to make a significant investment in reducing flood risk in the lower Skagit, upwards of $225 million initially, plus an additional $45 million over the 50-year life of the project. The proposed projects have the potential to greatly impact the people, the natural resources, and the economy of the Skagit River basin. For these reasons, it is imperative that the Corps: 1) consider a diverse suite of alternatives; 2) thoroughly evaluate the effectiveness of these alternatives under reasonable projections of future environmental conditions; and, 3) thoroughly evaluate the potential impacts of these alternatives to natural resources and to the people and economic sectors that depend on these natural resources.

The draft FR/EIS evaluates four alternatives: a "no action" alternative; two alternatives that propose to construct new leveed flood bypasses similar to the Yolo Bypass near Sacramento, California; and an alternative termed the Comprehensive Urban Levee Improvement (CULI) which proposes raising the height of current levees and constructing new levees in and near the cities of Burlington and Mount Vernon. All alternatives include adding flood storage capacity in Lake Shannon, and extending the duration of flood storage capacity in Baker Lake. The draft FR/EIS identifies the CULI alternative as the Preferred Alternative, or Tentatively Selected Plan (PA/TSP). The Corps concludes that: 1) this project will be effective at reducing flood hazard risks to less than one percent annual chance of exceedance (ACE)[1] over the 50-year project life span; 2) this project is cost-effective; and, 3) impacts to various natural resources will be avoided, minimized, negligible, or will be adequately mitigated.

General Comments on the Draft FR/EIS

Based on our review of the draft FR/EIS and additional pertinent information, we strongly oppose selection of a PA/TSP at this time. The evaluations and analyses presented in the draft FR/EIS lack sufficient thoroughness, and thus are insufficient to warrant the Corps' conclusions supporting selection of the CULI alternative. In addition, we do not believe the draft FR/EIS provides a sufficient array of feasible alternatives. Our main concerns are:

1. Climate change predictions for this region, pertinent historical data, and existing information on changing conditions in the project area are either not considered at all or are given only cursory attention. These are critical deficiencies. Neglected science and data related to sediment build-up, or aggradation, in the project area is of particular concern. This is discussed more fully in the detailed comments below. This information suggests that effectiveness of the proposed PA/TSP over the 50-year project life span may be seriously overestimated. This has far-reaching implications for: flood risk and flood damages; future improvements aimed at maintaining the desired level of protection in the face of changing conditions; economic costs of any such damages or improvements; and impacts of these efforts on natural resources. Failure to adequately integrate existing science and data related to aggradation and climate change is unwise and dangerous.

   There has been no analysis to determine which alternatives may prove most resilient, self-sustaining, and able to successfully function under a broad array of reasonably foreseeable conditions with minimal need for improvements. As such, there has been no true, unbiased accounting of long-term flood risk reduction, economic performance, and impact to natural resources. The Corps should consider these in the analysis to determine if the PA/TSP truly is the best alternative, or if a different alternative may be functionally, economically, and ecologically superior.

2. Levee setbacks could provide both flood hazard reduction and substantial natural resource benefits. However, this was not presented in any of the alternatives because it was previously screened out. The Corps screening analysis did not evaluate setback configurations most likely to be effective for reducing flood risk. No optimization

[1] One percent ACE is equivalent to a 100-year flood event.

analyses were performed to determine the most cost-effective configurations. In addition, the screening analysis did not consider benefits to natural resources, associated economic benefits, resiliency to climate change, and long-term cost-effectiveness. Levee setbacks should be reconsidered and presented as a viable stand-alone alternative and in combination with other measures such as levee height increases.

3. The three action alternatives presented lack diversity. Two of the alternatives are variations on the same theme of bypass channels. It is difficult to have confidence that the PA/TSP truly is the best option when so few alternatives were considered. In addition, the Baker Hydro Modifications are attached to all action alternatives in the current draft FR/EIS. The Baker Hydro Modifications are functionally independent of the base actions (i.e., the levee raises and the bypass channels) and carry a different suite of natural resource impacts. They also provide a relatively small proportion of flood risk minimization which may be compensated for via other measures. Therefore, it is objectionable to not present any alternatives which do not include the Baker Hydro Modifications. Feasible alternatives should be presented that do not contain the Baker Hydro Modifications.

4. Impacts to natural resources have not been thoroughly evaluated or considered, particularly in three areas:

    a. The evaluation presented for the Baker Hydro Modifications lacks critical areas of analysis on impacts to tribal interests and fisheries resources, including ESA-listed species.
    b. The PA/TSP will permanently degrade lower river (near Burlington and Mount Vernon) habitat and negatively impact many species, including threatened and endangered fish, and there is no evaluation of whether the proposed mitigation activities will offset these impacts.
    c. By widening and raising the existing levees and building new ones, the PA/TSP will preclude critical natural resource restoration opportunities, such as levee setbacks, across a large portion of the lower river and would inhibit habitat restoration and species recovery efforts.

    In general, we found that some impacts were not considered at all, that many evaluations lacked a robust consideration of the existing scientific literature, and that some evaluations neglected existing data. As a result, we have no confidence in the conclusions that impacts to various natural resources will be avoided, minimized, negligible, or adequately mitigated

    It is beyond the scope of this comment letter to provide a full listing of all areas of the draft FR/EIS where analyses should be strengthened. The Corps should collaborate closely with the Service, affected Tribes, stakeholders, and natural resource agencies to identify important areas for improved evaluation, as well as critical data gaps. The Corps should consider funding additional studies to fill critical data gaps, and should consider

contracting relevant professionals for evaluations beyond the scope of their capabilities. The Corps should reconsider selection of a PA/TSP based on these more thorough and robust analyses.

The Corps is mandated by the Fish and Wildlife Coordination Act to give equal weight to natural resource concerns in evaluating alternatives. Furthermore, all federal agencies, including the Corps, are mandated by the Endangered Species Act to conserve endangered and threatened species and aid in their recovery. Providing more thorough and robust evaluations will better facilitate meeting these obligations.

5. The draft FR/EIS does not consider the economic and social aspects of natural resources. Thus, a true accounting of economic costs and benefits of the proposed alternatives is not provided, resulting in a biased comparison of alternatives. For example, Skagit basin fish production supports robust fisheries. One alternative may cost less to construct, but may do economic harm from negative impacts to the fishery resources. Another alternative may cost more to construct, but may provide significant economic benefits to the fishery resources, potentially offsetting the difference in construction cost. We offer this as a hypothetical scenario only; it is not intended to represent the full array of relationships between the GI and Skagit basin natural resource economics. The Corps should consider fully integrating natural resource economics into the FR/EIS to allow for a fair and unbiased comparison of alternatives.

6. In our opinion, the draft FR/EIS does not embody the intent of the 2013 Principles and Requirements for Federal Investments in Water Resources (P&R's). The 2013 P&R's make clear that the United States is moving to more holistic, inclusive, and comprehensive processes for considering water resource development projects. The 2013 P&R's encourage healthy and resilient ecosystems, natural floodplain functioning, watershed approaches to addressing problems, full consideration of ecosystem services, full consideration of climate change, full consideration for natural resource economics and impacts, and full collaboration with Tribes, stakeholders, academia, and federal, state and local agencies. The 2013 P&R's also allow the Corps to consider a project's sustainability and *benefits* to ecosystems and natural resources as selection criteria, not just minimization of harm. We highly recommend the Corps incorporate sustainability and natural resource benefits into the selection criteria, and otherwise embrace the 2013 P&R's.

   We recognize that there may be no legal requirement for the Skagit GI to abide by the 2013 P&R's. However, the 2013 P&R's do state that, "To the extent possible, agencies are encouraged to begin implementing the concepts laid out in these modernized Principles and Requirements consistent with law" (p. 14). We encourage the Seattle District of the Corps to embrace these broad-minded, enlightened, and modern principles and be a leader in ushering in this new era of more responsible and well-thought-out water resource management. As such, we recommend that the Corps reconsider alternatives, evaluations, and selection criteria to better align with the 2013 P&R's.

In addition to the general concerns outlined above, we offer the following detailed comments and concerns.

Detailed Comments on the Draft FR/EIS

The comments outlined below are focused on specific resource issues and add to the general comments provided above.

Aggradation, Climate Change, and Project Effectiveness

Potential sediment build-up, or aggradation, in the project area near Mount Vernon and Burlington warrants careful attention and consideration because it bears significant implications to project effectiveness and impacts to natural resources. Aggradation increases the height of the river bed and diminishes the capacity of the levee system to hold flood waters. Significant aggradation could severely diminish the level of protection provided by the PA/TSP's levee system, or other potential solutions, prior to the end of the 50-year project period. The draft FR/EIS anticipates aggradation in the range of 0.5 to 1.5 ft over the 50 year project period and asserts that this would have a negligible impact on PA/TSP effectiveness. Unfortunately, the draft FR/EIS: 1) omits existing U.S. Geological Survey (USGS) stage-discharge and cross-section data; 2) provides a flawed interpretation of historic data; 3) neglects likely impacts of climate change on sediment supply, sediment transport, and riverbed aggradation; and, 4) does not provide a meaningful evaluation of sediment transport and potential aggradation in the study area. These are discussed in more detail in the following paragraphs.

As a result of these oversights, the anticipated aggradation rate may be severely underestimated. When all available data and climate change impacts are considered and appropriately interpreted, it is not unreasonable to anticipate 5.5 ft or more of aggradation over the next 50 years. This is nearly 4 times the maximum rate anticipated in the draft FR/EIS.

The cursory sedimentation analysis included in the draft FR/EIS is based on three data sources: 1) Corps sediment data from 1931 to 1978 (USACE 1978, cited in USACE 2008); 2) a comparison of eighteen cross-sections surveyed in both 1975 and 1999 (WEST 2000, cited in USACE 2008); and, 3) bed elevation data at the USGS gage near Mount Vernon from 1960 to 2005 (Mastin 2006, cited in USACE 2008). Together, these data suggest that the riverbed in the project area has aggraded at an average rate of approximately 1.7 ft per 50 years[2] between 1931 and 1999. The aggradation rate appears to have drastically accelerated from 1.0 ft per 50 years for the time period from 1931 to 1978, to 3.0 ft per 50 years for the time period from 1975 to1999. Nonetheless, the draft FR/EIS anticipates an aggradation rate of only 0.5-1.5 ft per 50 years, which is less than the 1931to 1999 average (1.7 ft per 50 years), and well below the average for the period between1975 to 1999 (3.0 feet per 50 years). The draft FR/EIS cites inconsistencies in the historic data as rationale for using this low estimate.

[2] The average rate of 1.7 ft per 50 years was calculated assuming bed elevation rise of 0.9 ft from 1931-1974 (1.0 ft per 50 years; USACE 1978, cited in USACE 2008), and 1.5 ft from 1975-1999 (3.0 ft per 50 years; WEST 2000, cited in USACE 2008).

The historic data inconsistencies cited by the draft FR/EIS are not actually inconsistencies at all, but arise from a flawed comparison between the 1975 to 1999 cross-section data and the USGS bed elevation data. Quoting from the draft FR/EIS:

> There is inconsistent evidence related to bed aggradation or degradation in this reach. Cross-section surveys indicate there has been an average increase in overall bed elevation of 1.4 ft for the 25 year time period between 1975 and 1999. However, records for the USGS gage in Mount Vernon (RM 17) indicate there has been about a 1-foot drop since 1959 (USACE 2014, p. 80).

Closer scrutiny of the cross-section data and the USGS gage site data was performed by the Corps in 2008 (USACE 2008). This report compared the two data sources across the same time period (1975 to 1999), and is therefore a more sound comparison than the one in the draft FR/EIS which relied on a mismatched time period (1975 to 1999 for the cross-section data, but 1959 to 2006 for the USGS data). The 2008 report indicated that seventeen of the eighteen cross sections showed increases in bed elevation from 1975 to 1999. Only one cross section showed a decrease: the one at the USGS gage site. The independent USGS bed elevation data at this site also showed a similar decline. The fact that both data sources showed the same trend at this site "…does suggest the broader, overall depositional trend shown by the cross-sections is also reliable" (USACE 2008, p. 20-21). The 2008 Corps report thus found no inconsistencies between the two data sources, and in fact concluded quite the opposite: that the USGS gage site data was consistent with and bolstered the legitimacy of the cross-section data. We agree with this finding.

The 2008 evaluation also demonstrates and underscores the fact that depositional trends at the USGS gage site may not represent overall trends at the broader reach scale. Clearly, depositional trends at the USGS gage site between 1975 and 1999 did not follow the same trends as the entire reach. This is not too surprising since the gage site is almost certainly influenced by hydraulic effects of three nearby bridges. The basis of the draft FR/EIS comparison is that trends at the USGS gage site should mimic reach-scale trends, and if they don't it points to inconsistencies between the two data sources. Basic hydro-geomorphic theory does not support this contention, nor do the specific findings of the 2008 report.

Data from the USGS Mount Vernon gage (USGS 2014) for the time period 1999 to 2014, which were not considered in the draft FR/EIS, indicate that the aggradation rate has continued to accelerate at a rapid rate. The Service performed a specific gage analysis (e.g., Pinter et al. 2001) using publicly available data from the USGS website (USGS 2014). These data show an upward shift in the relationship between discharge and water surface elevation (Figure 1) which indicates aggradation, assuming no drastic changes to channel slope or overall roughness have occurred. This analysis suggests an aggradation rate of approximately 5.3 ft per 50 years between 1995 and 2014, a near doubling of the 1975 to 1999 rate, tripling of the 1931 to 1999 average rate, and nearly quadruple the average rate anticipated by the draft FR/EIS.

These findings are consistent with USGS cross-section measurements 2 miles downriver. In 2012, the USGS collected data from the same cross-sections evaluated by WEST (2000). The USGS has not had funding to analyze the data, but did analyze results from one cross-section

near the Anacortes Water Treatment Plant which showed 10 ft of aggradation from 1999 to 2012 (Figure 2). As discussed in the preceding paragraph, sedimentation patterns at only one or two locations may not represent trends across the entire project area. However, the USGS data and results of the Service's specific gage analysis are consistent with the accelerating aggradation trend apparent in the 1931 to 1978 and 1975 to 1999 data. The magnitude of recent aggradation, implications to project effectiveness, and implications to natural resources suggest that this matter warrants closer scrutiny.

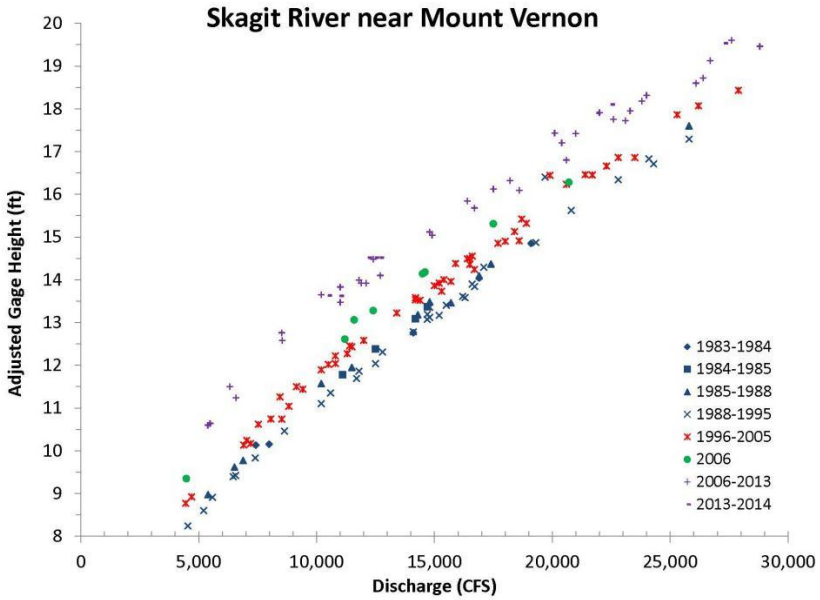

Figure 1. Stage-discharge relationship for the USGS gage near Mount Vernon (data source: USGS 2014). The plot was truncated at 30,000 cfs for clarity and because there were few data points above this point.

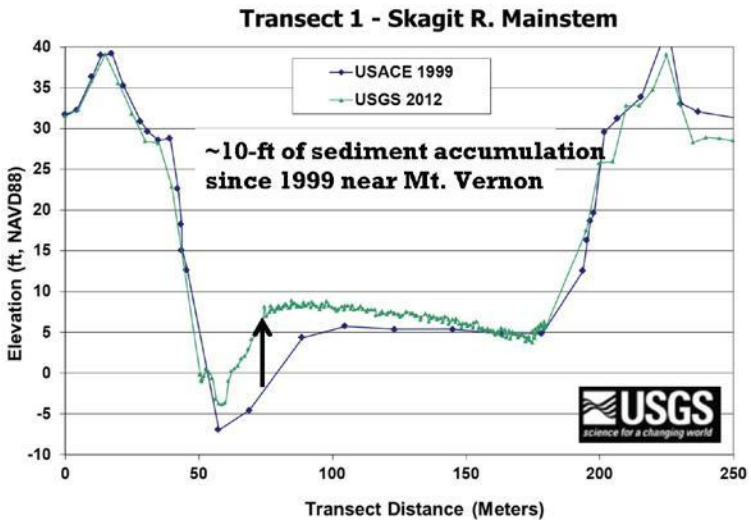

Figure 2. Comparison of bed elevation cross-section data from 1999 and 2012 near the Anacortes Water Treatment Plant (from Grossman and Fuller 2012). The arrow indicates magnitude and direction of bed elevation change due to aggradation.

This apparently increasing rate of aggradation is likely to accelerate even more if climate change predictions for this geographic area hold true. The Skagit River Basin Climate Science Report (Lee and Hamlet 2011) presents evidence and discusses how sediment loads in the Skagit River are likely to increase under current climate change predictions due to glacial retreat, snowpack reduction, bluff erosion, landslides, and increased peak flows, resulting in increased rates of aggradation downstream (p. 128-131). In addition, changes to sediment transport and deposition processes accompany downstream shifts in geomorphic environments, such as the gravel-to-sand transition, and the sand-to-silt transition. These shifts can result in aggradation rates in excess of those predicted by past trends, and may be an expected consequence of increased sediment supply from upstream. These effects are not just theoretical and in the distant future; they are occurring now in western Washington river systems similar to the Skagit[3] (Lee and Hamlet 2011, p. 128-131). Under each action alternative, the draft FR/EIS includes only cursory mentions of increased sediment transport into the project area from increased flows (USACE 2014, p. 74-80). These statements lack analysis, asserting only that effects on deposition will depend on balance between sediment transport and sediment supply. These statements also neglect to mention or consider the likely increase in sediment supply from sources such as glacial retreat, snowpack reduction, bluff erosion, and landslides.

Sea level rise may also influence aggradation in the project area near Mount Vernon and Burlington. Rising sea levels cause coastal rivers to aggrade (Phillips 1997; Blum and Törnqvist 2000; Taha 2006; Stouthamer and Berendsen 2007). Aggradation is not just limited to the part of the river directly affected by tides. Rather, aggradation is expected to propagate upriver as river gradient adjusts to a new, altered base sea level. The FR/EIS does not address this phenomenon.

We are deeply concerned that the draft FR/EIS has likely underestimated aggradation due to omitted data, misinterpreted data, and neglecting available science on climate change. The GI and PA/TSP represent a significant investment of financial resources into flood risk reduction for the project area. Given this degree of investment, a sound scientific evaluation of sediment sources and transport through the project area to determine project effectiveness and impact to natural resources is warranted. We recommend the following:

- A more rigorous, scientifically defensible evaluation of sedimentation and sediment budgets and transport in the project area near Mount Vernon and Burlington, which would include all of the available existing data, likely climate change impacts, and a quantitative assessment of sediment supply and transport, considering possible shifts in geomorphic depositional environment due to increased sediment loads.
- Provide funding to analyze the USGS cross-section data from 2012, specifically to assess project-scale trends in net aggradation and aggradation rate between 1999 and 2012.
- A quantitative evaluation of the effectiveness of each alternative and the PA/TSP under conditions of elevated aggradation.

[3] Although dams within some of the Skagit's subbasins will intercept upstream sediment inputs, the Sauk and Cascade Rivers are two unimpounded Skagit River tributaries that may deliver considerable sediment loads. The Sauk River in particular is impacted by receding glaciers on Glacier Peak.

- Describe contingencies in the event that severe aggradation substantially diminishes project effectiveness over the 50-year project period, and the likely impacts to natural resources of those contingencies.
- Include potential cost of combating aggradation in the project's economic analysis. Cost estimates should include planning, environmental reviews, mitigations costs, construction, and maintenance.

Levee Setbacks and Ecologically Beneficial Solutions

Levee setbacks have the unique potential to provide both flood hazard reduction and significant benefits to natural resources. In addition, setbacks would address the root cause of the flooding problem in the lower Skagit River basin: a river that is tightly confined by the existing levee system to a narrow channel. Compared to raising levees, setbacks may prove more effective in the long run (Criss and Shock 2001; Pinter 2005; Hudson et al. 2008), particularly by providing greater resilience in the face of climate change (Kousky et al. 2013). As such maintenance, repair, and improvement costs are likely to be less over the long-term. By utilizing the river's natural floodplain to provide flood storage and flood hazard reduction, levee setbacks may be considered a "green" or ecologically beneficial solution (e.g., Kousky 2010). Ecological benefits would likely accrue to floodplain wetlands, riparian forests, and freshwater and estuary fish habitat, among others. Such ecological benefits may stimulate economic growth. For example, levee setbacks may enhance the fishery resources enough to stimulate measurable economic activity in commercial and recreational fisheries and allied businesses (e.g., guide services, bait-and-tackle shops, etc.). For these reasons, levee setbacks and other ecologically beneficial solutions should be given careful consideration.

The Corps screened out levee setbacks from further consideration in 2013, and thus setbacks are not considered in any of the alternatives in the draft FR/EIS. The draft FR/EIS does contain information about the screening evaluation and reasons for screening out setbacks (USACE 2014, p. 43-46 and Appendix B, pages 41-44), asserting that the preferred setback configuration was not likely to be cost effective. However, the screening analysis: did not consider alternative setback configurations that may have been more cost-effective; did not perform any optimization assessments to identify cost-effective configurations; did not consider comparative costs of long-term maintenance and improvements relative to other alternatives; and did not consider benefits to natural resources and subsequent economic benefits. These are discussed in more detail below.

The screening analysis evaluated configurations that relied heavily on setbacks in the rural areas between Mount Vernon and Skagit Bay, rather than in the urban areas the project seeks to protect. The rationale for this approach was to "…[increase] downstream conveyance, thereby lowering flood levels for a given flow (USACE 2014, Appendix B, page 41). The hydraulic analyses presumably found that these configurations would not be effective at reducing flood flows in the urban areas. However, configurations that rely more on setbacks in and immediately downstream of the urban areas were not considered. Such configurations would be more likely to provide the desired flood hazard reduction benefits to the targeted urban areas. Setbacks in and near the cities of Mount Vernon and Burlington may seem infeasible on the surface due to

presence of urban infrastructure and development. However, there are large areas of agricultural and recreational land uses along the river throughout the urban corridors which may reduce the costs of setback levees.

The Corps should consider ecologically beneficial solutions, including alternative setback configurations that would be more likely to provide the desired level of protection to Mount Vernon and Burlington. Instead of focusing on conveyance in downstream areas, setbacks that focus on conveyance and storage capacity within and immediately adjacent to the urban areas should be considered. Analyses of ecologically beneficial solutions should include:

- Optimization procedures similar to those described in Zhu et al. (2007), Dierauer et al. (2012), Remo et al. (2012), and Kousky and Walls (2014).
- An assessment of resilience to aggradation and climate change affects, and anticipated costs of long-term maintenance and improvements in relation to other proposed alternatives.
- Land uses on the waterward side of setback levees that are compatible with the corresponding flood risk. Some types of agriculture and recreational uses, such as parks, may be able to remain in place. Other areas could be converted to compatible land uses. This type of approach may help minimize the high costs of buyouts and rezoning.
- Levee setbacks or other ecologically beneficial solutions may provide benefits to natural resources, particularly in regard to salmon and steelhead productivity. Commercial, Tribal, and/or recreational fisheries would stand to benefit. Reconnected floodplain wetlands may provide waterfowl hunting and bird watching opportunities. These and other potential natural resource benefits should be considered for their benefits to the local economy. Kousky (2010) and Kousky and Walls (2014) provide some examples of how various aspects of natural resource economics may be considered in the flood hazard reduction planning process.

Baker Hydro Modifications

The draft FR/EIS proposes to implement Article 107 of the 2008 FERC license, which allows for two actions:

Article 107(a) Increase the time of flood storage capacity in Baker Lake by up to three and a half months. The volume of flood storage capacity will remain the same but the time it is provided may be extended, starting earlier and ending later. Storage may be provided as early as September 1, as opposed to the current November 1 start date. Storage may be provided through April 15, as opposed to the current March 1 end date.

Article 107(b) Providing flood storage capacity in Lake Shannon from October 1 through March 1. Currently, Lake Shannon provides no flood storage.

The draft FR/EIS is unclear and conflicting in places on how the Baker Lake provision, Article 107(a), will be implemented and how it will differ from current operations. For example, page 131 indicates an October 1 drawdown start date, but page 75 suggests the drawdown may start in September. It is also unclear on how the proposed operations differ from current operations. This lack of clarity makes it difficult to provide a robust evaluation of impacts to natural resources. The Corps should provide a clear description of differences between current and proposed operations in terms of drawdown begin date, drawdown end date, refill start date, and refill end date.

Important fishery resources in Baker Lake and Lake Shannon include sockeye (*Oncorhynchus nerka*), coho (*Oncorhynchus kisutch*), and ESA-listed Chinook salmon, ESA-listed steelhead trout, ESA-listed bull trout, and coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), all of which are indigenous to the Baker River watershed. Most of these fishery resources were substantially diminished due in part to the construction and operation of the Upper and Lower Baker dams. However, recent efforts to enhance upstream and downstream fish passage, supplement some naturally-producing stocks with hatchery production, and restore and enhance lake and tributary habitat have allowed several of these species to begin to recover. Sockeye salmon have received particular attention and have responded with dramatically increasing populations. Sockeye salmon are economically and culturally important because they provide nearly half of the income to the Upper Skagit Tribe's commercial and subsistence riverine fisheries. Sockeye salmon also support a robust non-Tribal recreational fishery, which further contributes to the area's economic vitality. The Upper Skagit Tribe has been participating in sockeye rebuilding efforts by releasing hatchery-reared sockeye fry into both lakes. The implementation of the fisheries measures outlined in the 2008 FERC license began in Baker Lake with fry releases in 2009, and continued with fry releases into Lake Shannon starting in 2012. Plans for coho rebuilding efforts are also underway. Bull trout in the Baker River watershed have also seemingly benefitted from these efforts, as their numbers have been increasing in recent years presumably due in part to the increasing forage base provided by increasing juvenile salmon productivity.

The draft FR/EIS provides a very brief (less than a page and a half) and incomplete assessment of potential impacts to the fishery resources in Lake Shannon and Baker Lake. The proposed drawdown of Lake Shannon and expanded window of low water level in Baker Lake carry potentially significant negative implications to fishery resources in these lakes. The draft FR/EIS briefly discusses potential impacts to productivity of zooplankton (an important juvenile salmon food resource) in Baker Lake and Lake Shannon, how this may influence sockeye productivity, and impacts to sockeye spawning. However, the brief summaries contained in the draft FR/EIS do not consider important existing information, do not consider some important ecological relationships, oversimplify other ecological relationships, lack detail, and are almost exclusively qualitative. These are discussed in more detail below. The result is that a thorough or sufficient evaluation of possible impacts to the important fishery resources in these lakes is not provided in the draft FR/EIS.

The draft FR/EIS recognizes that the entire aquatic food chain will likely be impacted by the proposed actions. It further recognizes that "…overall impacts to fish species in both reservoirs is difficult to predict, as very little data exists" (USACE 2014, p. 131). However, despite these

statements, it concludes that "…the overall impacts to fish in both reservoirs will be minor due to several mitigating factors" (USACE 2014, p. 131). We do not believe that sufficient information or analysis has been presented to substantiate this conclusion. For example, the draft FR/EIS cites a 2004 report (Mazumder 2004) indicating that existing prey resources could support 2 to 3 times greater sockeye production. However, the sockeye production cited in the Mazumder (2004) report was from 1994 to 2000, prior to many of the sockeye rebuilding efforts. Since then, sockeye production has substantially increased, conceivably using most or all of the excess carrying capacity cited in Mazumder (2004). This makes it much more likely that impacts from changes to flood capacity storage on the prey base will indeed have an impact on sockeye salmon productivity.

Other mitigating factors cited by the draft FR/EIS include: 1) reduction in euphotic volume (the upper water layer that receives sunlight and produces the zooplankton that juvenile salmon forage on) could increase relative prey density thereby making it easier for sockeye juveniles to find food; 2) changes in euphotic volume matter less in winter (when the changes to flood capacity storage will occur) due to natural variations in zooplankton abundance; and, 3) volume of the drawdowns is below some significant threshold. As presented, these are all speculative statements that are not discussed in any detail or in the context of existing science and literature.

One potential bottleneck to juvenile salmonid production that is not discussed in the draft FR/EIS is predation (Mazumder 2004). In Lake Shannon, predation on juvenile salmonids could conceivably increase due to density-dependent effects of diminished water volumes associated with drawdowns. In Baker Lake, an extended period of lower water volumes may also increase predation via similar density-dependent relationships. This could be compounded by the fact that water temperature will likely be warmer and predators more active during the extended drawdown times (i.e., in September, October, March, and April). To the extent that these drawdown periods diminish juvenile salmon productivity, the decrease in forage base may negatively impact bull trout abundance. The degree of any such effects would depend on relative impacts from other predators in the lakes including but not limited to cutthroat trout and rainbow trout. These relationships warrant consideration and evaluation.

The earlier Baker Lake drawdown will also likely impact sockeye spawning in Baker Lake, Baker River, and other delta and lake tributaries. The draft FR/EIS asserts that peak spawning will be minimally affected. However, there is no discussion of overall impact to the spawning population, quantification of the proportion of the spawning population affected, proportion of spawning area affected, when exactly the spawning season occurs, and time of peak spawning. In addition, lake drawdowns may affect access to spawning tributaries for sockeye and bull trout, and potentially other species. These are not addressed in the draft FR/EIS.

We recommend the Corps expand this section of the draft FR/EIS to include a more thorough, detailed, and comprehensive assessment of potential impacts to the fishery resources in Baker Lake and Lake Shannon from implementing Article 107. These assessments should also address downstream impacts to fishery resources and include all relevant ecological impacts and relationships, all pertinent existing science and literature, and implications to fishery management and recovery plans. How the Corps intends to mitigate for negative impacts should also be discussed. Where possible, effects should be quantified. For example, how much will

the euphotic zone be reduced under the various water storage scenarios, how much will prey base be decreased, how much will carrying capacity and production potential be reduced, how much will natural-spawning sockeye production be reduced? Consider funding empirical studies to fill these critical data gaps. It is beyond the scope of this comment letter to provide a thorough list of all ecological relationships, fishery resources, and critical data gaps that warrant additional attention and evaluation. We recommend the Corps collaborate with the affected Tribes, stakeholders, and resource agencies to identify what these impacts are and how best to address them.

Riverward Levee Widening

The PA/TSP proposes to raise 9.2 miles of levees, which will require widening the base of the levees between 10 and 60 ft (USACE 2014, p. 155). The draft FR/EIS indicates that widening will occur on the landward side of the levees to the maximum extent possible. It is laudable for the Corps to avoid widening the levees riverward where practicable. In fact, the Service considers it imperative to avoid additional permanent degradation in the lower Skagit River due to the existing tenuous state of fish habitat and fisheries resources in the basin. Any further constriction by levees on the riverward side would have serious negative consequences to fish and fish habitat and recovery of ESA-listed fish. However, the draft FR/EIS offers no evaluation of where the levees may need to be widened riverward, with only one exception. Knowing where levees will be widened riverward and how much they will be widened in these areas is critical to assessing the extent and magnitude of impacts to fish and fish habitat. In addition, the draft FR/EIS does not provide any mention or evaluation of the environmental impacts of expanding the levees waterward and further constricting the river.

Riverward levee widening represents permanent degradation of riverine function and/or aquatic habitat and resources in an already degraded system that cannot absorb many more negative impacts. The Corps should identify specific criteria and circumstances that will be used to decide if or where riverward levee expansions will be necessary and how they propose to mitigate or offset these impacts. The Corps should also provide an assessment of where riverward levee expansions are being considered, which criteria or circumstances may necessitate riverward widening in these areas, and the length and width of the possible expansions in these areas. The draft FR/EIS should also include a thorough, scientifically-based assessment of environmental impacts of riverward levee widening. This should include quantitative hydraulic assessments to determine impacts to velocity, permanent impacts to designated critical habitat for ESA-listed fish, effects on survival and recovery of listed fish, and proposed mitigation measures to offset these impacts.

Floodplain Development

Executive Order 11988 seeks to “avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct or indirect support of flood plain development unless there is no practicable alternative.” We are concerned that the PA/TSP may encourage the very floodplain development that Executive Order 11988 seeks to avoid. The draft FR/EIS asserts that “The proposed action is not anticipated to induce development of the floodplain or to otherwise adversely affect any

floodplain, since the County plans to direct development to existing urban areas…No land use changes are expected to result from the project that would enhance development conditions in the floodplain." However, the relationships between the PA/TSP, the National Flood Insurance Program (NFIP), public perception of risk, and floodplain development have not been evaluated by the Corps.

The current levee system provides protection from 25-year flood events (4 percent ACE). The PA/TSP proposes to increase this to provide protection from 250-year flood events (0.4 percent ACE). Raising the level of flood protection to this level carries NFIP and development implications: leveed areas protected from 100-year flood events (1 percent ACE) or better are no longer considered part of the floodplain, thus the NFIP limitations on floodplain development no longer apply. This may be exacerbated by public perception that flood risk is zero in these areas, and thus they are safe places to develop (Pinter 2005; Ludy and Kondolf 2012). Although the intent of the PA/TSP is to provide flood risk reduction to the urban areas, some rural areas will benefit from the increased protection (USACE 2014, p. 65). These areas may no longer be considered "floodplain" for NFIP purposes and may be at risk for development.

The draft FR/EIS suggests that, since the County plans to direct development to existing areas, the PA/TSP will not induce further development in the floodplain outside the city limits of Burlington and Mount Vernon. However, there is no discussion of what exactly those plans are, whether they are codified in local ordinances, how stringent or flexible they are, how effective they may or may not be at preventing development outside of city limits, or to what degree they are subject to change over the 50-year project period. Thus, simply stating what the County's intentions are at this point in time provides little assurance that they will be effective at preventing floodplain development in the future.

We recommend the Corps provide a more thorough evaluation of how the PA/TSP and other alternatives may encourage floodplain development. Evaluate the relationships between the PA/TSP, the National Flood Insurance Program (NFIP), public risk perception, and floodplain development. Provide maps showing which areas of the floodplain will receive protection at the 100-year event level (1 percent ACE) protection from the NED optimized plan (0.4 percent ACE). Clarify and provide more detail on the County's plans for directing development into city limits, including whether they are codified in local ordinances, how stringent or flexible they are, how effective they may or may not be at preventing development outside of city limits, and to what degree they are subject to change over the 50-year project period. Based on these results, reevaluate whether the PA/TSP would violate Executive Order 11988.

Impact to Recreational Fisheries

Executive Order 12962, Recreational Fisheries, requires that federal agencies evaluate and document the effects of federally funded actions on aquatic systems and recreational fisheries, and otherwise take measures to conserve and enhance recreational fisheries. The draft FR/EIS does not currently address how the proposed alternatives will impact recreational fisheries.

Again, we appreciate the opportunity to comment on the Skagit GI draft FR/EIS. The Service is eager to work collaboratively with the Corps and other interested stakeholders, Tribes, and agencies to address shortcomings in the current proposal. We are confident that, working together, we can identify the sustainable, resilient, and resource-friendly solutions that the people and natural resources of the Skagit basin deserve. Please contact Mark Celedonia (mark_celedonia@fws.gov; 360-534-9327) or Martha Jensen (martha_l_jensen@fws.gov; 360-753-9000) for questions about our comments and/or for future coordination and collaboration on the Skagit GI.

Sincerely,

FOR Thomas L. McDowell, Acting Manager
Washington Fish and Wildlife Office

cc:
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Upper Skagit Indian Tribe, Sedro Woolley, WA (H. Chesnin)
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State of Washington
Department of Fish and Wildlife
P.O. Box 1100, 111 Sherman St. (physical address), La Conner, Washington 98257-9612

August 5, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers, CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Subject: Comments for the Draft Feasibility Report & Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation

Dear Ms. Hadley:

The Washington Department of Fish and Wildlife (WDFW) has reviewed Draft Feasibility Report and Environmental Impact Statement (DFREIS) for the Skagit River Flood Risk Management General Investigation. The U.S. Army Corps of Engineers (USACE) wrote the DFREIS to document the process of developing potential solutions to reduce flood risk in the Skagit River Basin. WDFW has participated in public and agency meetings with the USACE and other stakeholders during our review of the DFREIS. WDFW appreciates the arrangement of the informational meetings and opportunity to comment.

Overall, WDFW has concerns about impacts to fish and wildlife resulting from the proposed Tentatively Selected Plan (TSP) and other alternatives. Diking and flood control already have eliminated much of the fish habitat in the lower Skagit River, estuary, and delta through loss of large woody debris, riparian corridors, freshwater wetlands, connection to floodplain and those associated habitats, and the channel migration zone and associated habitat creation such as side channels. Expanding the levee system will further habitat losses. By protecting the floodplain with an additional levee system, USACE may encourage further building and residential development, which will continue to degrade the fish and wildlife habitat around the Skagit River.

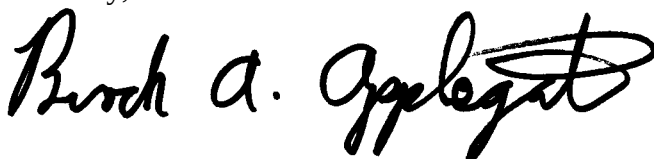
WDFW finds the level of environmental analysis for the proposed changes in operations at the Baker River Hydroelectric Project inadequate and does not meet the expectations of the Settlement Agreement Parties. The USACE led the Baker River Hydroelectric Project Settlement Agreement Parties to believe that additional environmental analysis through studies would occur if USACE proposed additional flood storage and different timing for reservoir drawdowns. The earlier proposed drawdown of Baker Lake would impact spawning sockeye and

reduce rearing habitat. The proposed change in timing of the drawdown also could reduce the productive capacity of the reservoirs during the sockeye growing season, which could reduce winter survival and smolt fitness for the following spring. Reduced smolt fitness may delay smoltification and create competition between age classes for a decreasing macro-invertebrate population in the reservoirs. WDFW recommends that USACE conducts studies on the potential impacts before the completion of the Environmental Impact Study (EIS). Proposed additional flood storage and changes in drawdown timing in Settlement Agreement Articles 107(b) and 107(c) still need environmental studies and analysis because the original licensing studies did not address the impacts of the proposed changes enough to satisfy many of the Settlement Agreement Parties.

WDFW has concerns about the TSP construction and the changed flows of the Skagit River on some of our restoration projects, such as those on Fir Island and Edgewater Park near Mount Vernon. We recommend further analysis on our restoration projects and the effects by the TSP implementation. WDFW asks the USACE to reconsider their old practices of heightening old levees and building new levees to construct ourselves out of our flood problems. USACE will have much more success in long-term and more permanent flood prevention by restoring natural riverine and estuarine processes. The USACE will more than likely have to build higher dikes and the new dikes farther upstream perpetually. Unfortunately, the old USACE paradigms of levee construction will more than likely continue to degrade fish and wildlife habitat, which will lead to lower fish and wildlife populations. WDFW recommends the USACE adopts a new standard of more levee setbacks and riprap removal.

Thank you for sending us the DFREIS for our review. WDFW welcomes the opportunity to consult further with the USACE on the TSP. We encourage future dialog on all USACE proposed projects. If you have any questions or need more information or clarification on the comments from the WDFW, please feel free to call me at (425) 379-2310.

Sincerely,



Brock Applegate
Fish and Wildlife Biologist

Cc: Justin Allegro, WDFW Olympia
Brett Barkdull, WDFW La Conner
Bob Barnard, WDFW La Conner
David Brock, WDFW Mill Creek
Wendy Cole, WDFW La Conner
Bob Everitt, WDFW Mill Creek

SPECIFIC COMMENTS REGARDING THE DRAFT FEASIBILITY REPORT & ENVIRONMENTAL IMPACT STATEMENT FOR THE SKAGIT RIVER FLOOD RISK MANAGEMENT GENERAL INVESTIGATION

3.7.3 Levee Setback Preliminary Alternative. WDFW recommends that the USACE conducts a more thorough analysis of levee setbacks or gives reasons for not considering the alternative more thoroughly. WDFW suggests a cost benefit analysis of land acquisition and easement development as compared with more environmentally damaging alternatives, such as the TSP. In developing a cost analysis, USACE should include researched levee setbacks that balance economics and environmental impacts. We would point to a past variable setback plan explored jointly by USACE and USFWS, which mimics natural conditions and processes more closely and allows for more habitat diversity and creation. With this approach, USACE would allow additional riparian habitat, development of side channels, and river connectivity with the floodplain. Setbacks would allow more room for natural floodplain functions such as floodwater storage and conveyance during high flow events. An approach of this kind would include riprap removal, where possible, to improve habitat and prevent juvenile stranding. WDFW asks the USACE to reconsider their old practices of heightening old levees and building new levees to construct ourselves continuously out of our flood problems. USACE will have much more success in long-term and permanent flood prevention by restoring natural riverine and estuarine processes. The USACE may have to build higher dikes and the new dikes upstream perpetually. Unfortunately, the old USACE paradigm of levee construction will continue to degrade fish and wildlife habitat, which leads to a decline in fish and wildlife populations. WDFW understands that USACE cannot meet the entire goal for flood risk reduction completely with levee setbacks, but please incorporate more levee setbacks than currently proposed.

3.8.2.3 CULI Feature Descriptions, General Operation and Maintenance (O&M). As the USACE strives to reduce impacts to fish and wildlife resources, WDFW recommends allowing willows and other hardwoods to grow on one or both side of the levees when creating their levee O&M protocol. Please also include the O&M protocol in the Comprehensive Urban Levee Improvement (CULI) feature description so that it can receive environmental analysis. Increasing vegetation on the levees would benefit littoral habitat and increases nutrient inputs through additional substrates for invertebrate. Please also include specific animal control measures for analysis.

4.13.1 Affected Environment. Please address the impacts of the alternatives on tidegates and the estuarine habitat.

4.14.3.2 Fish, Urban Levee Improvements. Please address the impacts to federally listed Chinook salmon (*Oncorhynchus tshawytscha*), including the predicted additional flooding of the Nookachamps River. WDFW requests more specifics in the impacts and analysis. WDFW recommends that the USACE follows the Chinook Recovery Plan, which the USACE could better meet through less levee construction and the use of more levee setbacks and riprap removals.

5.3 Risk and Uncertainty. Under the Comprehensive Urban Levee Improvement (CULI) Alternative, the 1% ACE flood elevations may increase by about 1 foot in the Nookachamps Basin. As an important river for fish habitat, particularly habitat for the listed Chinook salmon, WDFW agrees that the USACE needs to conducts analyses and studies on the effects of additional flooding in the Nookachamps Basin. We also emphasize the need for additional study of the transfer of flood risk from the Skagit River to the Nookachamps River and the need to address the future flood risk in the Nookachamps River with additional levees or dams in the future. We find this piecemeal approach to reducing flood and translocation of flood risk bad for the fish and wildlife resources and not in anyone's best interest.

5.8.3 Conceptual Mitigation Measures for Effects to Threatened and Endangered Species, Fish, and Aquatic and Riparian Habitats. In order for the project to determine mitigation, USACE and stakeholders, including fish and wildlife resource agencies, should collaboratively decide on the quantity and quality of habitat impacted and ways to assess the acreage, quality of habitat, and mitigation. USACE and stakeholders should determine the process for calculating mitigation and the mitigation itself so that USACE can analyze it as an element of the TSP in the Final EIS. The TSP will need to assess the habitat lost directly through building up and extending the dikes and the indirect loss through channel confinement and velocity acceleration. The TSP will need to include mitigation for fish spawning and rearing losses, including the sockeye salmon (*Oncorhynchus nerka*) and Coho salmon (*Oncorhynchus kisutch*) in the Baker River system that USACE has proposed for additional flood storage and a change in timing for reservoir drawdown. Other habitat impacts that deserve mitigation could include the impacts of tidegates at road crossings, loss of riparian habitat, loss of habitat connectivity to the river, and change of hydrology to the wetlands near the river. Outside of the federally listed species mitigation, USACE and stakeholders should figure the acres impacted, the quality of habitat, and the mitigation for those impacts. The USACE and stakeholders should collaboratively create a dredging mitigation plan should the TSP cause the need for dredging. Please include all mitigation plans and projects with specific detail within the TPS for environmental analysis.

6.18 Executive Order 11988 Floodplain Management. WDFW would like further explanation on how this proposal remains consistent with Executive Order (EO) 11988 Floodplain Management, which requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of flood plains. EO 11988 also recommends federal agencies to avoid direct and indirect support of floodplain development where other practicable alternatives exist. To accomplish this objective, "Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities." The USACE should include the following actions when executing the EO: acquiring, managing, and disposing of federal lands and facilities; providing federally-undertaken, financed, or assisted construction and improvements; conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

Under Section 209 of the Water Resources Development Act of 2000, the local sponsor must

participate in and comply with applicable Federal floodplain management and flood insurance programs prior to construction of any flood protection project that receives Federal assistance. The statute also requires local sponsors to prepare a floodplain management plan that will "preserve and enhance natural flood plain values." WDFW contends that the federal agency and local sponsor can implement additional actions beyond what the USACE has currently proposed to better preserve and enhance the natural flood plain values.

While current floodplain management protects existing infrastructure, the TSP may conduct actions contrary to the intentions of the EO by constructing levee systems that will protect and encourage future development. Perhaps WDFW could better support the TSP if undeveloped areas around the levees had conservation easements and allowed natural riverine processes to occur. Please address federal statutes and executive orders in the development of the recommended alternatives. Floodplain development in the cities and Skagit County have degraded Skagit River basin tributary habitat to a large degree. WDFW would discourage any further habitat degradation through increased floodplain development; particularly more construction encouraged through increased flood protection and reduced flood risk.

Western
Washington
Agricultural
Association

August 5, 2014

To: United States Army Corps of Engineers

From: Western Washington Agricultural Association

Re: Draft FR/EIS for the Skagit River Flood Risk Management General Investigation Study

Dear Ms. Hannah Hadley;

Western Washington Agricultural Association (WWAA) is a non-profit, grower-based organization primarily concerned with providing economic, environmental and regulatory support to Puget Sound farmers, with our primary membership including agricultural landowners within the greater Skagit River watershed. In addition to that workload, WWAA provides contract services to Skagit County special purpose districts, including dike and drainage, that maintain the critical infrastructure necessary for the agricultural industry and rural community. The Skagit River General Investigation (GI) must address several key concerns and questions before expecting community support.

Currently, the GI preferred alternative, which best protects incorporated Skagit County businesses and landowners, provides little protection or options for rural businesses and landowners in the event of catastrophic Skagit River flooding. As a representative for those landowners, and contractor for the districts, WWAA is very concerned with both the transfer of risk associated with the diversion of, as well as the current infrastructures ability to efficiently and effectively drain these flood waters. Under current conditions, both regulatory and financial constraints prevent current infrastructural upkeep and upgrade to a level necessary for typical winter conditions, let alone 100-year flood flows. The rural Skagit community cannot accept responsibility for the entire Skagit population without some assurance and ability to necessarily maintain and upgrade infrastructure.

Rural Skagit County residents have long stated that with the appropriate regulatory framework, flood events can be dampened and mitigated by rural, agricultural lands. However, this commitment is dependent upon several key factors. If flood waters are diverted to inundate croplands, residences, and businesses, the ability and infrastructure to effectively remove these waters in a timely manner must be place. Some of these structures are in place, and only need proper maintenance or expansion, including ditches/canals and culverts. However, some infrastructure including floodgates, pumps, and reservoirs need funding, approval and installation to best remove excess waters during emergency events. Due to locally assessed budgets, these districts do not have adequate funding or manpower to install these

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features. Additionally, due to federal regulatory constraints disregarding districts' statutory authorities and responsibilities, as well as lack of environmental and political support, Skagit County dike and drainage districts do not have the operating capacity and discretion to support the preferred GI alternative.

Further, in order to satisfy environmental concerns, regulatory agencies continue to slow and limit normal maintenance and upkeep of the agricultural and surface water drainage system. It is counter-intuitive for them to then place further burden upon these infrastructure systems and those that manage them only to need additional infrastructure during emergency flows. If, in order to make simple modifications and improvements to the drainage infrastructure, these landowners and districts must acquire federal, state, and local authorizations, it is inconceivable to think that the investment required for 100-year flood conditions could ever be met due to painfully slow approval process. However, if the same entities acknowledged the jurisdictional authority of the special purpose districts, and utilized and small amount of regulatory discretion, many of these drainage infrastructure needs could be met and improved system-wide with no environmental impact and little monetary investment.

Generally, Skagit delta (including Samish River delta) landowners understand risks of living within the sub-tidal floodplain. However, added responsibility and protection of municipal areas at their expense is unacceptable. If floods come, rural landowners will respond to the need. They come together and support their neighbors, even if not next door. This area has seen floods due to breached and over-topped dikes, and with time the affected areas recovered. However, those were not 100-year floods, and flood waters were not diverted to those areas. The current GI recommendation calls for both, with little in terms of addressing the recovery needs of those most impacted. These rural and agricultural landowners are those same individuals who volunteer as first responders in catastrophic events. Please do not forget their needs, knowledge, and expertise while deciding their fate, only to rely upon them for help when the inevitable comes from the Skagit River.

Based on size, population, and topography, some drainage districts require larger volume, higher capacity infrastructure than other districts. Other districts' drainage infrastructure serves residences above and outside of their boundaries because water flow goes downhill. Now, in response to the GI, some districts will be required to manage flood water flow, greatly exceeding any of these factors/conditions previously listed. Do Skagit County districts have the facilities and infrastructure necessary for this demand? We are fearful and concerned that they do not. Furthermore, without a lengthy permit process, regulatory agencies limit even small level changes and improvements designed for better drainage and water delivery on the landscape. WWAA would like to propose an alternative to the status quo.

We suggest an assessment of current dike and drainage infrastructure, along with some prioritization of infrastructure deficiencies, needs, and costs would identify and direct resource needs to incrementally and systematically prepare the districts for 100-year flood events. WWAA encourages our natural resource and regulatory agencies to work closely with Skagit County districts to better understand day-to-day operations, and how those operations do, or do not, impact the watershed so there is clear, reasonable requirements associated with clear, desired outcomes. Where the agencies have jurisdiction

or regulatory authority over a water body or infrastructure activity, they too should have the responsibility to help ensure and fund its statutory function. The agencies should analyze their role and desired outcome, and assist those entities that protect the land and life of this area, without constant bureaucratic and regulatory red tape increasing costs and slowing maintenance.

Skagit County dike and drainage residents know how to remove water from the landscape for agricultural production without negatively impacting the environment. Help the special purpose districts and rural landowners help you. By stifling and delaying daily functions, less time is spent on addressing the real threats to our environment and resources. Rather than the current model, utilize the district knowledge and history of this landscape and improve the drainage infrastructure to a level that gains public support for this alternative.

Thank you for the opportunity to comment on this important matter. If you would like further comment or additional information, please contact Brandon Roozen at 360-424-7327 (broozen@westag.org).

Sincerely,

Brandon Roozen

Executive Director

Washington State Department of Transportation

Lynn Peterson
Secretary of Transportation

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August 4, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER – P.O. Box 3755
Seattle, Washington 98124-3755

Sent via email to: skagit.river@usace.army.mil

Subject: WSDOT comments on the Draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation (GI)

Dear Ms. Hadley:

The Washington State Department of Transportation (WSDOT) was pleased to review the Draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation. We fully support the efforts of the U.S. Army Corps of Engineers (Corps) and Skagit County to create a plan that will reduce flood damage in the basin over the next 50 years.

We, along with many stakeholders in Skagit County, applaud the Corps' efforts to move this very important piece of work forward, particularly since we are engaged in one of 19 Climate Adaptation pilot projects occurring across the nation. Our adaptation work is funded by the U.S. Department of Transportation's Federal Highway Administration (FHWA). Your work and the accompanying data will prove very helpful as we integrate our transportation adaptation planning with the flood risk reduction strategies found in the Tentatively Selected Plan (TSP).

In order to make the Corps product as useful as possible, we offer comments organized into the following three general areas:

1. Inclusion of transportation infrastructure in the structure inventory and as part of the economic impacts due to damage or failure
2. Emergency/evacuation plans
3. Flood risk reduction and highway infrastructure relationships

1. Inclusion of transportation infrastructure in the structure inventory and as part of the economic impacts due to damage or failure

WSDOT: We appreciate the inclusion of transportation delays as part of the Economics Appendix Section 4.3. We request the Corps EIS or refinement of the TSP also include the cost of structural degradation to transportation infrastructure due to flood impacts including: Interstate 5 (I-5), all other state highways, and other

major public infrastructure as part of the structure inventory (or perhaps as another component to "Other Damage Categories").

Our top concern is maintaining the safe and reliable transport of people and goods throughout and through the basin (primarily north/south mobility from British Columbia Canada to central Puget Sound and points beyond).

State highways are infrastructure and should be accounted for in the "cost" side of the damage equation. Infrastructure is identified many times within the Draft Feasibility Report and Environmental Impact Statement:

- **Page 4:** *"Critical infrastructure in and around Mount Vernon and Burlington include I-5, Burlington Northern Santa Fe (BNSF) Railroad, State Routes 9, 20, and 536, numerous water and gas pipelines, light industry, and municipal infrastructure. There is also critical infrastructure in Sedro-Woolley includes State Routes 9 and 20 (critical local access routes)..."*
- **Page 10:** *"The purpose of the Federal action is to reduce flood risks, life safety threats, and damages in the Skagit River Basin as a result of flooding..." We recommend adding "including highway infrastructure."*
- **Page 13:** *"... critical regional infrastructure such as I-5 and State Routes 9 and 20, the BNSF railroad..."*
- **Page 22:** *"Critical Infrastructure in the Floodplain: Interstate 5 (I-5); BNSF Railroad; SR 20, SR 9, and SR 536..."*

We suggest including this list of critical state transportation infrastructure in:

- Table 3-2, page 24: Structures Inventory Under Existing Conditions
- Table 3-3, page 25: Value of Damageable Property
- Table 3-1, page 28, Appendix C: Structure Inventory Under Existing Conditions

We also recommend adding SR 11, county roads, and city streets in the inventory of structures.

It appears that the greatest risk to state highway infrastructure will be on SR 20 at Sterling, SR 9 in the Nookachamps, SR 11 as it crosses the Joe Leary Slough and I-5 between the new Burlington Levee and Bow Hill. We at WSDOT would like to continue assisting the Corps and Skagit County with these refinements. Also, WSDOT owns and operates drainage/stormwater infrastructure, which should be included in the flood flow return—post event drawdown.

Even though *"The CULI Alternative is the alternative that is the most cost effective, has the least real estate impacts, and has the least potential infrastructure impacts (3.9, TSP Recommendation, p-63"),* the cost-effectiveness of this alternative would be enhanced if highway, road, and streets were included in the comparison analysis.

In a recent WSDOT study (http://www.wsdot.wa.gov/projects/i5/sr534cookroadstudy/), the cost of improving I-5 through the Mount Vernon/Burlington urban area was over $1.5 billon. The existing asset value is unknown, but it will likely cost well over $1.0 billion to replace as it currently exists. Any significant flood impact would likely damage I-5 and its structures.

Finally, the GI study's goal is to …*"identify a plan that reduces flood risks and contributes to national economic development."* Transportation infrastructure is a proven vital component of the economy, as was demonstrated on May 23, 2013, when the I-5 Skagit River Bridge collapsed after being hit by an oversized load.

2. Emergency/Evacuation Plans

WSDOT: We request the Corps EIS or refinements to the TSP include WSDOT and the Washington State Patrol (WSP) in the emergency and evacuation plans.

The discussion of evacuations does not include WSDOT or WSP, both of which would be very involved (Chapter 3, p-21). And in the Non-Structural Components, there is no reference to creating a coordinated multi-jurisdictional evacuation plan (Chapter 3, p-51).

3. Flood risk reduction and highway infrastructure relationships

WSDOT: We at WSDOT would value continued partnership with the Corps and Skagit County in an effort to further the relationship among flood risk reduction and highway infrastructure resiliency and severe weather adaptation. The following are important issues to WSDOT that should be refined in the TSP to meet our goals for our adaptation work.

FHWA and WSDOT are exploring how to leverage studies like the Corps GI Study to improve the resiliency of our highways in coordination with local and federal efforts to reduce flood hazards. Our job is to be as prepared as possible. WSDOT's pilot project will:

- Prepare site-specific strategies to improve state transportation infrastructure.
- Evaluate options and (where possible) estimate the life cycle costs of options.
- Develop a plan of action to enhance community emergency response and personal and freight mobility during and post-flood.

(See more info at: http://www.wsdot.wa.gov/sustainabletransportation/adapting.htm)

Suggestions for TSP refinements:

1. It appears that the CULI does little to reduce the volume and velocity of water and its impact on the SR 9 corridor within the floodway—this may be an area of joint improvement that can help add resiliency to SR 9 and surrounding communities.
2. The Burlington Hill Cross Levee (BHCL) is good for the three-bridge corridor (reduces pressure), but will add to the likelihood of I-5 inundation from the Samish River to Chuckanut (SR 11). If Interstate 5 needs to be modified to increase resiliency, these plans should be coordinated with the Corps TSP.
3. The operations and maintenance of the "floodgates" that intersect SR 20, I-5, and SR 536 should be further defined in the TSP.
4. SR 11 has low-lying areas that could keep it closed for extended periods if it is flooded by water that is diverted through operation of the BHCL. In further refinements to the TPS, interior drainage and how pooled water would be evacuated after a flood event should be analyzed.

5. It appears that the levee expansion for Districts 12 & 17 will eliminate both Whitmarsh and Stewart roads. If there are opportunities to keep these roadways open, WSDOT should be a partner in that planning.
6. *"The increase in Sterling overflow could cause a ½ to ¾ ft. rise in 1% ACE flood elevations (in) the northern floodplain."* As the TSP is refined, the potential impacts to SR 20, SR 11 and I-5 should be determined.
7. Clarification should be included in the TSP with respect to the analysis of climate change (specifically, sea level rise) and how this affects both the Skagit River and tidal flooding beyond the boundary conditions used in the Skagit River hydraulics models.

Correction:

1. Chapter 3, Page 54, refers to SR 9 as Chuckanut Drive. However, SR 11 is Chuckanut Drive.

Again, thank you for the opportunity to comment on the Skagit River Flood Risk Management General Investigation Draft Feasibility Report. We look forward to continued progress on flood risk management and improved resiliency of our highways in Skagit County.

Sincerely,

Todd Harrison, P.E.

Assistant Regional Administrator
WSDOT – NW Region/Mount Baker Area

Megan White, P.E.

Environmental Services Director
WSDOT – Headquarters

CC: Linea Laird, Assistant Secretary – Engineering and Operations
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UNITED STATES DEPARTMENT OF COMMERCE
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August 5, 2014

Hannah F. Hadley
U.S. Army Corps of Engineers
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Seattle, Washington 98124-3755

Re: Comments on Draft Feasibility Report/Environmental Impact Statement for the Skagit River General Investigation.

Dear Ms. Hadley:

NOAA's National Marine Fisheries Service (NMFS), Oregon/Washington Coastal Area Office, is providing comments for the Draft Feasibility Report/Environmental Impact Statement (FR/EIS) for the Skagit River General Investigation (GI). The Army Corps of Engineers (COE) and their sponsor, Skagit County, are proposing projects to reduce flood damage and protect lives and property in the Skagit River Basin during the 50-year period from 2020 to 2070. NMFS supports those objectives. However, the construction of new levees in floodplains and reconstruction of existing levees will impact aquatic resources in waters of the United States, including waters of federally protected anadromous fish species in the Skagit River Basin. We believe the COE has underestimated the magnitude of the effects the project will have to those species and to the aquatic environment.

The FR/EIS is a detailed document covering an array of issues ranging from purpose and need to geomorphology, hydrology, economics, etc. However, the environmental section fails to adequately address significant effects of the project. The FR/EIS emphasizes short-term construction-related effects like turbidity and riparian loss, but the document lacks detailed analysis on permanent habitat impacts and interruption of habitat forming processes. While short-term construction-related effects are relevant, they are minor compared to the habitat losses and reduction in available habitat in the floodplains that will result from the proposed levee raising and construction of new levees. The project will result in permanent habitat loss that is not considered in your document. NMFS has written numerous biological opinions, comment letters, and white papers that referenced scientific publications, including Skagit-specific research that document the major effects of levee construction and maintenance. These effects include the elimination of channel migration opportunities, disconnection of off-channel habitat and floodplain connectivity, and floodplain constriction. NMFS recommends that the COE expand its analysis to adequately address the long term habitat loss and disruption of habitat forming processes associated with the proposal.

In 2008, the NMFS completed a consultation with the Federal Emergency Management Agency (FEMA) on the National Floodplain Insurance Program (NFIP) in Western Washington and concluded that program jeopardized the existence of Puget Sound Chinook salmon, Puget Sound steelhead, and Southern Resident killer whales, and adversely modified Puget Sound Chinook salmon critical habitat. The conclusions were based in part on a reduction of floodplain connectivity and access for juvenile Chinook salmon which reduces abundance and productivity of the species. We recommend that the COE work closely with FEMA to determine if the proposal is consistent with the FEMA NFIP Biological Opinion.

The COE proposes to use the Habitat Capacity Mitigation Tool (HCMT) to determine appropriate mitigation for the Skagit GI. NMFS helped develop this tool when a previous consultation found that maintenance of existing levees would jeopardize listed species and their habitats. In that consultation, (NMFS NWR 2011/00333), the COE agreed to monitor the performance of those mitigating measures (e.g., flow velocity near and downstream of logs) and determine if the different measures were providing the anticipated habitat benefits. Since completion of the project in 2011, we have not received any monitoring reports and have no assurance that the mitigation measures are producing additional habitat for juvenile salmon. Furthermore, we have received several complaints that the rebuilt banks extend farther into the Skagit River than originally proposed.

The HCMT did not mitigate for all of the effects of the previous project. It reduced effects of the proposed project from jeopardy to listed species in the action area and from adverse modification of critical habitat but did not compensate for all of the effects or out of kind mitigation actions were undertaken that do not fully compensate for lost habitat function. That project had a smaller effect on salmonid habitat and the hydrology of the system than the proposed GI because it was mostly rebuilding existing levees. This proposed project, on the other hand, has the potential to expand up to 9.2 miles toward the river and/or add 1-2 miles of new levees in the floodplain, which will constrict it even further. These large scale changes could severely affect the hydrology of the reach and eliminate a large amount of salmonid habitat, and cannot be mitigated with logs in the river or willow plantings.

We are concerned that the COE will underestimate their level of impacts and underfund their mitigation requirements. Qualifying statements in the document such as "whenever possible" is ambiguous and can have consequences to our listed species. Considering the estimated $225 million cost for project, and only $3.4M is assigned to mitigation, it does not appear the COE is considering overriding costs such as land acquisition, heavy machinery rental for creating side channels, or any type of habitat improvements other than placing relatively small logs in front of rock walls or willow planting. Similarly, the COE has estimated $28M for real estate acquisition based on land purchases for the levee construction and utility moving. It does not mention any estimates for potential land purchases for levee setbacks. The COE should avoid such statements like "whenever possible", identify how many miles they intend to extend the levee waterward of the levee, or procure enough funding to adequately mitigate project impacts.

In the Skagit basin, the COE has typically repaired levees and mitigated for their effects later, sometimes several years later. This creates disproportionate adverse effects to aquatic resources because effects occur immediately and persist without offsetting mitigation. Harm to listed

species persists when mitigation implementation is delayed. Considering the large amount of harm that is likely to occur from this proposed project, NMFS asks that mitigations occurs before existing levees are raised and new levees are placed.

In meetings, the COE have mentioned that they do not intend to conduct more studies regarding any part of the Skagit GI. This is concerning, with the level of uncertainty about so many aspects of this proposed project. In House Referendum Conference report number 697, the 96th Congress, 2nd session 12 (1979), the House cited that the action agency shall "...give the benefit of the doubt to the species, and... place the burden on the action agency to demonstrate to the consulting agency that its action will not violate section 7(a)(2) of the Act." Given all the uncertainty, we are concerned that this project may significantly delay or preclude recovery of listed species. As a result, the COE may have to conduct much more mitigation than it appears is budgeted for.

The hydrology model assumes that the raised levee is going landward. With words like "whenever possible", there is a good possibility that much of that levee will go waterward. The model may be wrong and may underestimate how much or what magnitude it would change.

In previous meetings, NMFS expressed concern with the hydrologic effects of each alternative, not only to the lower reaches where most of the action will occur but in neighboring reaches as well. In particular, the Comprehensive Urban Levee Improvement (CULI) alternative would raise levees and place new ones in floodplains. These new structures would either hold floodwater back further upstream, laterally into surrounding floodplains, or force it downstream where it can be more erosive and destructive. Your current report does not address how neighboring reaches are affected. This is concerning, since you may be underestimating the effects of your project if you are not studying the total effect of changed hydrology in the river system. Levees and bank hardening often begets additional bank hardening, with additional adverse effects.

We are concerned that new levees could devalue mitigation projects, recovery actions, or other existing natural areas that were set aside for salmon and aquatic habitat. Plans to connect the levee through Lions Park will reduce greenspace next to the river. This would eliminate large trees and good riparian habitat that is rare in this system. The map also indicates a levee modification in west Mount Vernon that may affect Edgewater Park (i.e., the forested side channel that was built for salmon restoration). New levees proposed in the Sterling Reach and Nookachamps River floodplain may also affect potential restoration projects that were identified in the Puget Sound Chinook Salmon Recovery Plan, and mitigation banks that were built to restore salmon habitat in the Nookachamps watershed. If the COE's new or modified levees make mitigation projects or natural areas less suitable for salmon, you must address those impacts and restore habitats elsewhere.

The proposed changes in flood storage at the Baker River dams will adversely affect Puget Sound Chinook salmon, Puget Sound steelhead, and other salmonids both upstream and downstream of the dams. The COE should identify these effects, quantify how many redds and individual fish will be affected, and propose measures to minimize the number of redds or fish harmed.

Because the proposed action will modify a stream or other body of water, NMFS will also provide recommendations and comments for the purpose of conserving fish and wildlife resources under the Fish and Wildlife Coordination Act (16 U.S.C. 662(a)) at a later date. NMFS looks forward to working with you throughout the EIS and ESA consultation process. If you have any questions or comments regarding this letter or NMFS' involvement with this subject, please contact Joel Moribe of the Washington State Habitat Office at (206) 526-4359, or by electronic mail at joel.moribe@noaa.gov.

Sincerely,

Mark Wilson for

Kim W. Kratz, Ph.D.
Assistant Regional Administrator
Oregon Washington Coastal Area Office

cc: Evan Lewis, U.S. Army Corps of Engineers

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OFFICE OF
ECOSYSTEMS,
TRIBAL AND PUBLIC
AFFAIRS

August 5, 2014

Ms. Hannah F. Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Re: U.S. Environmental Protection Agency comments on the U.S. Army Corps Seattle District Skagit River Flood Risk Management General Investigation Draft Feasibility Report and Environmental Impact Statement. EPA Project Number: 97-066-COE.

Dear Ms. Hadley:

We have reviewed the Corps' Skagit River Flood Risk Management General Investigation Draft Feasibility Report and Environmental Impact Statement (draft FR/EIS). Our review was conducted in accordance with the EPA's responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 specifically directs the EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Our review of the draft FR/EIS considers the expected environmental impacts of the proposed action and the adequacy of the EIS in meeting the procedural and public disclosure requirements of NEPA.

Project Summary
The draft FR/EIS documents the process of developing potential solutions to reduce flood risk in the Skagit Basin, including: evaluation of flood risk in the Skagit River Basin; formulation, evaluation, and screening of potential solutions to these problems; and the recommendation of a plan to address flood risk in the Basin. The draft FR/EIS also includes an environmental consequences analysis of the final array of alternatives.

The purpose of the federal action is to reduce flood risks, life safety threats, and damages in the Skagit River Basin as a result of flooding. The action is needed because the Skagit River Basin experiences frequent flooding resulting in damages to both rural and urban areas throughout the basin.

More than 20 management measures - including, construction of new levees, modification of existing levees, construction of bypasses, flood proofing of existing structures, and education and outreach – were assembled into several preliminary alternatives. Alternatives in the preliminary array were then developed into the following final array of alternatives:

- No Action Alternative
- Comprehensive Urban Levee Improvement (CULI) Alternative – Tentatively Selected Plan/ Preferred Alternative
- Joe Leary Slough Bypass Wide Confined Channel
- Swinomish Bypass Wide Confined Channel

EPA Review and Rating

In our review of the draft FR/EIS, we have identified serious environmental impacts that we believe should be avoided in order to adequately protect the environment. All of the action alternatives, including the Tentatively Selected Plan/Preferred Alternative, have the potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives. The Preferred Alternative - as proposed in the draft FR/EIS - has the potential for significant environmental degradation because new levees, additional armoring on the slopes of levees, and ongoing replacement of riprap and vegetation management in the riparian zone would further degrade water quality and habitat in the already channelized and altered lower Skagit River.

Further degradation is significant because, according to the draft FR/EIS, the Skagit River produces the greatest abundance of salmonids and the greatest number of salmonid stocks in Puget Sound. The Skagit is also the only river system in Washington that supports all six species of Pacific salmon (including Endangered Species Act-listed Puget Sound Chinook salmon and Puget Sound steelhead), and sea-run cutthroat. The Skagit River and its tributaries also host the largest population of ESA-listed Puget Sound bull trout and the most abundant wild Chinook salmon populations. Approximately 30 percent of the total Puget Sound Chinook originate in the Skagit Basin. These are significant ecological resources and adding to the historic loss of channel habitat - which has been identified as one of the most significant limiting factors in the recovery of Skagit Chinook - is an outcome that should be avoided by project modification or other feasible alternatives.

We believe that implementation of the proposed action would set a precedent for future actions with the potential for significant adverse effects by locking in existing channelization pressures on riparian and aquatic habitat for at least another 50 years. It also represents a lost opportunity to take restorative actions at a time when numerous federal, state, local, and tribal entities have undertaken substantial commitments to protect and restore environmental resources in Puget Sound.

Our review has also identified a need for additional information, data, analyses, or discussion which could reduce the environmental impacts of the proposal and should be included in the final FR/EIS. Our primary interest in such additional information relates to potential impacts to fish in Baker Lake and Lake Shannon, and fisheries information that may lead to a new or modified alternative and/or additional mitigation.

Based on these concerns, we are rating the draft FR/EIS Environmental Objections – Insufficient Information (EO-2). Please refer to the attached comments for a more detailed discussion. A copy of our rating system is enclosed.

Thank you for this opportunity to comment. We look forward to working with you to address our concerns and recommendations. We recognize the challenges presented by this project and continue to believe that your efforts are key to improving and sustaining long-term system integrity for the Skagit River Basin.

If you have any questions regarding the EPA's comments, please contact me at (206) 553-2581 or by electronic mail at allnutt.david@epa.gov, or Erik Peterson, the lead reviewer for this project. Erik can be reached at (206) 553-6382 or peterson.erik@epa.gov.

Sincerely,

R. David Allnutt, Director
Office of Ecosystems, Tribal, and Public Affairs

Enclosures:

1. Detailed EPA comments on the Skagit River Flood Risk Management General Investigation Draft Feasibility Report and Environmental Impact Statement

2. EPA Rating System for Draft Environmental Impact Statements

DETAILED EPA COMMENTS ON THE SKAGIT RIVER FLOOD RISK MANAGEMENT GENERAL INVESTIGATION DRAFT FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

Achieving a net environmental benefit

Consistency with federal responsibilities

Because we believe major federal actions on the Skagit River should achieve net environmental benefits - especially for floodplain function and salmon - we are concerned that the draft FR/EIS's Preferred Alternative has the potential to cause significant environmental degradation by exacerbating adverse pressures on environmental resources. We also are concerned that the Preferred Alternative would represent a lost opportunity by committing flood risk management investments in a way that sets a precedent for future actions that collectively could result in significant environmental impacts.

Achieving a net environmental benefit from this project - through alternative design and/or additional mitigation - would be consistent with the Corps' and other federal agencies' responsibilities to implement the Puget Sound Action Agenda. In particular, achieving a net environmental benefit would be consistent with the Puget Sound Partnership and Tribal Habitat Strategic Initiatives and the actions identified in Strategies A5, "Protect and Restore Floodplain Function" and A6, "Protect and Recover Salmon."

Working toward achieving a net environmental benefit would also be consistent with commitments expressed by the Puget Sound Federal Caucus to address the concerns raised in the Western Washington Treaty tribes' "Treaty Rights at Risk" paper, which outlined threats to salmon habitat and other important treaty-protected resources. In this capacity, member federal agencies, including the EPA and the Corps, have agreed to work together to explore ways in which our regulations and resources can be aligned to promote recovery of resources important to treaty tribes. Any opportunity to restore natural processes in the Skagit watershed would be consistent with this broader federal effort.

We also believe working toward a net environmental benefit would be consistent with the Council on Environmental Quality's March 2013 final Principles and Requirements for Federal Investments in Water Resources.[1] The Guiding Principle "Healthy and Resilient Ecosystems" states:

> Federal investments in water resources should protect and restore the functions of ecosystems and mitigate any unavoidable damage to these natural systems....In order to protect ecosystems, alternative plans should first seek to avoid any adverse environmental impact, and when that is not possible, alternatives should minimize environmental impacts. When damage to the environment is unavoidable, mitigation for adverse effects should be provided as required by law. Restoration of ecosystems can enhance the health and resilience of the natural environment and should be part of alternative plans, where feasible and appropriate."[2]

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[1] The 2013 Principles and Requirements supersede the 1983 version that the Corps cited in the draft FR/EIS and will become effective 180 days after final issuance of related Interagency Guidelines, which has not yet occurred. In the meantime, the 2013 Principles and Requirements state that "agencies are encouraged to begin implementing the concepts laid out in these modernized Principles and Requirements consistent with law." We strongly encourage the Corps to do so. See http://www.whitehouse.gov/sites/default/files/final_principles_and_requirements_march_2013.pdf at pp. 1, 14.

[2] *Id.* at p. 4.

We believe that restoration - or, a net environmental benefit - is both feasible and appropriate for this project because significant ecological resources are present and reasonable opportunities for project modifications (through alternatives and/or mitigation) exist.

Our primary environmental concerns and related recommendations are detailed below. The recommendations specify the environmental resources, such as off-channel habitat, that we believe should experience a net benefit as a result of this project.

Water quality

With regard to water quality, given the designated use for cold water aquatic life, we are concerned that the removal of trees on revetments and placement of rock along the river would increase temperatures through decreased shade and the effect of thermal retention and light reflection from the rocks. The increase in water temperature may locally reduce dissolved oxygen levels in the water.[3]

In addition to directly and indirectly increasing temperature and reducing dissolved oxygen, the Preferred Alternative represents a lost opportunity to protect water quality because it would maintain and increase channelization of the river, exacerbate sedimentation concerns, and perpetuate diminished riparian habitat for at least the next 50 years. Such outcomes increase the likelihood of future temperature and dissolved oxygen problems.[4]

Recommendation

We recommend that the final FR/EIS include project modifications and/or mitigation that would increase shade and decrease dissolved oxygen and sedimentation concerns.

Riparian Habitat

We appreciate the draft FR/EIS's clear impact statement about the Preferred Alternative, "Effects to riparian habitat would be exacerbated with this alternative."[5] Exacerbating effects to riparian habitat in the project area represents significant environmental degradation because the riparian zone downstream of Sedro-Wooley is fragmented and provides inadequate protection of habitats and refugia for sensitive aquatic species such as salmon. The Preferred Alternative represents a lost opportunity and sets a precedent for ongoing adverse impacts, because levee maintenance, such as vegetation removal, would maintain the existing condition of an improperly functioning riparian corridor.

Recommendation

We recommend that the final FR/EIS include project modifications and/or mitigation that would result in a net improvement for shade, fine and large woody material and nutrient inputs, organic and inorganic debris accumulations, and improved terrestrial insect and riparian-associated wildlife habitat.

Aquatic habitat

We are concerned about even minimal impacts to Large Woody Debris (LWD) and off-channel habitat and tidal channels. Impacts to LWD are a concern because of the importance of LWD in creating and maintaining habitat complexity, and because, at present, LWD is limited in the Skagit River system. Similarly, off-channel habitat provides critical rearing and refuge functions in the floodplain and has

[3] Draft FR/EIS, p. 95.
[4] Draft FR/EIS, p. 95.
[5] Draft FR/EIS, p. 108.

been substantially reduced by diking. Impacts are of even greater concern when climate change is taken into account, as the draft FR/EIS usefully discusses.

> Cumulative impacts to off-channel habitat would derive from increases in channel depth and associated inundation combined with the extensive diking of the Skagit River that has already led to the loss of much of this habitat in the system, particularly through the urban corridor. Climate change could exacerbate these impacts by way of more frequent and intense flood events, greater storm surge, and sea level rise, thereby increasing depths and frequencies of inundation of any remaining off-channel habitat.[6]

Recommendation
We recommend that the final FR/EIS include project modifications and/or mitigation that would result in a net improvement for off-channel habitat and tidal channels. We also recommend that the final FR/EIS include project modifications and/or mitigation that would result in net improvements for LWD. We note our preference for restoring LWD to the system through the restoration of natural processes, as compared to installing logjams which require long-term monitoring and maintenance.

Wildlife and fish
We believe that the Preferred Alternative's exacerbation of adverse pressures on fish from diking, agricultural activities, dams, insufficient riparian vegetation and large woody debris recruitment, and developed floodplains would represent significant environmental degradation. The U.S. Fish and Wildlife's 2001 Fish and Wildlife Coordination Act letter - usefully included in Appendix D of the draft FR/EIS - confirms our concern, "Because the lower river has been so severely channelized and altered, any further degradation to fish habitat would be inconsistent with salmon recovery."

In the short term, we are concerned about added pressure from this project's proposal to remove riparian vegetation from a system where it is already insufficient. In the long term, we are concerned and agree with the EIS's assessment, that adding armoring to the slopes of levees will perpetuate poor conditions in the urban corridor, limiting refuge habitat for fish and making them more vulnerable to predation.[7] Also, we are concerned that additional water in the system under the preferred alternative may result in a reduction of off-channel and shallower littoral habitat - which is currently limited and provides important rearing habitat.

In addition to concerns about impacts to fish in the lower river, we have concerns about impacts to fish - especially sockeye salmon - that could result from Baker Dam operational modifications. We agree that holding reservoir pools at a reduced level for flood storage will affect fish communities in Lake Shannon and Baker Lake. Decreasing the volume of the euphotic zone has the potential to reduce fish populations, as the volume of water with sunlight sufficient for photosynthesis is critical to the productivity of aquatic systems. Spatial and temporal changes to the littoral drawdown zone, the area between reservoir water level before drawdown and after pool drawdown, also has the potential to reduce fish populations by reducing the amount of spawning substrate, dewatering redds that may have been established before drawdown, decreasing the amount of external debris input into the reservoir, and preventing access to Baker Lake delta tributaries at an important time for migrating adult sockeye. Impacts to natural spawners are of concern because of their unique ecological function to the overall

[6] Draft FR/EIS, p. 115.
[7] Draft FR/EIS, p. 128.

sockeye rebuilding effort. Despite changes to the euphotic and littoral zones, the draft FR/EIS concludes that "...overall impacts to fish would be minor due to several mitigating factors."[8]

We are concerned that the draft FR/EIS does not contain sufficient information to support the conclusion that overall impacts to fish in Baker Lake and Lake Shannon would be minor. First, the statement that there will be no change in the start date of October 1st for drawdown at Upper Baker does not provide a basis to conclude that peak spawning would be minimally affected. The start date issue does not address concerns about lower water levels between October 15 (the proposed flood storage requirement), and November 15 (the current flood storage requirement). Of particular interest is impacts to Sockeye migration and spawning. Second, we are concerned that the draft FR/EIS has insufficient information on the sockeye carrying capacity of Baker Lake and Lake Shannon (which is only qualitatively discussed) under the alternatives. Sufficient consideration of impacts to fish in Baker Lake and Shannon Lake is especially important because the related sockeye fishery is a critical tribal resource.

Recommendation
To address our concern about impacts to fish from the Baker Dam Operational Modifications management measure, we recommend that the final FR/EIS include additional information on impacts to fish from earlier overall drawdown at Baker Lake, and, additional information on the sockeye carrying capacity of Baker Lake and Lake Shannon under the alternatives.

Tribal consultation
Special attention should be paid to environmental impacts on resources held in trust or treaty resources. To disclose your efforts, we believe that discussing in the EIS how your consultation process has addressed the conceptual phases identified in the document, "EPA Policy on Consultation and Coordination with Indian Tribes" would be generally consistent with Executive Order 13175 and full disclosure under the NEPA, and, in line with the spirit of the President's executive memorandum of September 22, 2004. The phases are identification, notification, input, and, follow-up.[9]

Natural process alternative
Consistency with federal responsibilities
The draft FR/EIS's inclusion of a Levee Setback Alternative in the preliminary array of alternatives was partially responsive to our September 9, 2011 scoping letter recommendation for full consideration of an alternative that would maximize opportunities to restore natural processes. That alternative had, for example, potential to improve floodplain connectivity, riparian vegetation and wetland development. Elimination of the Levee Setback Alternative from the final array of action alternatives, however, is unresponsive to our recommendation because the draft FR/EIS, as a result, does not fully consider a natural process alternative.

Our scoping comments noted our strong support for actions that restore natural processes and specifically recommended that the Corps fully consider a natural process alternative in the EIS because we believe that full consideration of such an alternative would be consistent with the Corps' responsibilities to implement the Puget Sound Action Agenda, which the EPA has approved as the Comprehensive Conservation and Management Plan for Puget Sound under the Federal Clean Water Act.

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[8] Draft FR/EIS, p. 131.
[9] See page 4 at: http://www.epa.gov/indian/pdf/cons-and-coord-with-indian-tribes-policy.pdf

We reiterate our belief that full consideration of a natural process alternative would be consistent with the Department of the Army's Planning Guidance Notebook, which states "It is national policy that ecosystem restoration, particularly that which results in the conservation of fish and wildlife resources, be given equal consideration with other study purposes in the formulation and evaluation of alternative plans."[10]

We also note our belief that full consideration of a natural process alternative would be consistent with the Council on Environmental Quality's March 2013 final Principles and Requirements for Federal Investments in Water Resources. The final Principles and Requirements section "Evaluation Framework" requires that Federal investments be evaluated using an ecosystem services approach in order to capture all effects (economic, environmental and social) associated with a potential Federal water resources investment, and to ensure that potential Federal investments in water resources are justified by public benefits. In addition, CEQ specifically recognizes that ecosystem services and effects relevant to a water resources evaluation include aquatic and riparian habitat as well as maintenance of biodiversity. CEQ further states that, "A narrow focus on monetized or monetizable effects is no longer reflective of our national needs, and from this point forward, both quantified and unquantified information will form the basis for evaluating and comparing potential Federal investments in water resources to the Federal Objective."[11] In light of CEQ's updated perspective, we are concerned that the draft FR/EIS's final array of alternatives may not include an alternative that would achieve public benefits.

The inclusion of a natural process alternative in the final FR/EIS would be consistent with CEQ's final Principles and Requirements because we believe it could be designed in a way that would achieve overall public benefits as described in the 2013 Principles and Requirements - as opposed to achieving a net benefit relative to the superseded the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies dated March 10, 1983. A natural process alternative would perform better if it achieved flood risk benefits as well as net benefits for water quality, aquatic and riparian habitat and the maintenance of biodiversity.

Recommendation
To address our concern that the draft FR/EIS does not fully consider a natural process alternative, we recommend that the final FR/EIS include a modified alternative with both flood risk and ecosystem benefits. Consider the following modifications.

- Variable levee setbacks, especially in locations with potential for both flood management and ecosystem benefits.
- Rebuilding or retrofitting the BNSF railroad bridge. The BNSF railroad bridge creates a flow bottleneck that promotes upstream flooding and may limit the effectiveness of downstream levee setbacks.

Clean Water Act Section 404(b)(1) Guidelines
Alternatives analysis
We believe that alternative designs, and project configurations should be investigated and developed to further reduce impacts to the aquatic environment and ecological processes from our Clean Water Act Section 404 oversight role. To thoroughly demonstrate compliance with the 404(b)(1) Guidelines at 40

[10] Department of the Army Regulation 1105-2-100, p. C-12.
[11] See http://www.whitehouse.gov/sites/default/files/final_principles_and_requirements_march_2013.pdf at p. 6.

CFR Part 230.10(a) a thorough analysis of all practicable alternatives is needed to achieve the basic purpose and ensure selection of the least environmentally damaging and practicable alternative.

Recommendation
To address our concern about alternatives from a Clean Water Act Section 404 oversight perspective, we recommend that the final FR/EIS, including Appendix D, address other scenarios or project configurations that could further reduce impacts to the aquatic environment and ecological processes. Consider, as recommended in the natural process alternative section above, a more thorough examination of alternative scenarios that reduce the extent of disconnection of the Skagit River from its floodplain - such as variable levee setbacks.

Impact analysis
Impacts that need to be more fully characterized under the 404(b)(1) analysis for the preferred project alternative include: addressing the total direct footprint of fill material placed in wetlands, the Skagit River below the ordinary high water mark, and any/all work in streams and sloughs (culverts, tide gates, bridge crossings, etc); and addressing the indirect, secondary, and cumulative impacts associated with further fragmenting or disconnecting the Skagit River from its floodplain. Then, it will be important to take a hard look at project design element refinements to further reduce impacts caused from disconnecting the Skagit River from its floodplain, wetlands, streams, and sloughs.

Compensatory mitigation
The 404(b)(1) Guidelines at 40 CFR Part 230.10(d) further require adequate compensatory mitigation for all demonstrated unavoidable impacts to aquatic resources. The draft FR/EIS gives a generic list of some of the things that could be done as compensatory mitigation, but does not link the types and kinds of compensatory mitigation that could offset specific impacts to aquatic resources. For unavoidable impacts, compensatory mitigation should be consistent with the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.[12]

The EIS should include a discussion of all mitigation options, including on-site mitigation. For unavoidable losses to aquatic resources, compensatory mitigation should be implemented in advance of the impacts to avoid temporal habitat losses. To the extent possible, the following information from a Clean Water Act Section 404 related draft mitigation plan should be included in the EIS:

- A description of the resource type and amount that will be provided, the method of compensation, and the manner in which the resource functions of the compensatory mitigation project will address the needs of the ecoregion, physiographic province, or other geographic area of interest.[13]
- A description of the factors considered during the compensatory mitigation project site selection process.[14]
- A description of ecological performance standards that will be used to assess whether the project is achieving its objectives.[15]
- A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed.[16]

[12] 33 CFR 325 and 332, and 40 CFR 230.
[13] 40 CFR 230.94 (c)(2).
[14] 40 CFR 230.94 (c)(3).
[15] 40 CFR 230.95.
[16] 40 CFR 230.94 (c)(10).

- Descriptions of the long-term management plan, adaptive management plan, and financial assurances.[17]

Impacts to proposed restoration sites

We appreciate the draft FR/EIS statement that the preferred alternative "...would not impact or compromise any of the completed or proposed restoration sites in the Basin."[18] We are concerned, however, that no supporting information is provided. To support this claim, we recommend that the final FR/EIS include additional information - such as a list and/or map, or cross-reference - which identifies completed or proposed restoration sites in the Basin that could be impacted or compromised. We believe these would include completed or proposed restoration sites which are located in the lower Skagit River basin, in nearby tributaries and sloughs.

Climate change

We appreciate your effort to account for climate change impacts in the draft FR/EIS. For example, we appreciate that you conducted a sensitivity analysis to consider the effects of climate change even though the Corps has not established a procedure for addressing potential hydrologic changes caused by future climate change.[19] While we appreciate the effort to account for climate change impacts, we believe the analysis can be improved for the final FR/EIS.

First, we are concerned that climate change impacts such as higher flood discharges could substantially reduce the effectiveness of the project's flood risk management measures. The existing reservoir and levee system provides the lower river basin with flood risk reduction only up to the 4% annual chance of exceedance (ACE) level, or, as a return-interval, the 25 year flood level. This level of flood risk protection is, according to the draft FR/EIS, unacceptable for the residential, commercial, and industrial infrastructure of the cities of Burlington and Mount Vernon and is a threat to life safety.[20] Our concern is that management measures designed to the 1% ACE, due to potential climate change impacts such as increases in flood discharges, may only achieve a 4% ACE.[21] Failing to achieve estimated benefits due to climate impacts is of concern because the project would serve only to maintain what is currently viewed as an unacceptable amount of flood risk protection.

Recommendation

The final FR/EIS should provide additional information describing how, under climate change, the Preferred Alternative meets the project's basic purpose and need.

Our second climate change related concern is that the draft FR/EIS Benefit-Cost Analysis does not include results which are informed by climate change sensitivity analysis. According to Appendix C's Benefit-Cost Analysis, "The .4% ACE CULI Alternative scale provided the greatest contributions to National Economic Development (NED) as it maximizes net benefits (annual benefits less annual costs) at $9.2 million and results in the greatest benefit-cost ratio of 1.9."[22] We are concerned that this benefit-cost ratio would be lower if climate change sensitivity were taken into account. The benefit-cost ratio(s) would be lower given climate change because the costs remain the same, but the benefits - reduced flood

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[17] 40 CFR 230.94 (c)(11-13).
[18] Draft FR/EIS, p. 100.
[19] Draft FR/EIS, Appendix C, p. 67.
[20] Draft FR/EIS, p. 10.
[21] Draft FR/EIS, p. 76.
[22] Draft FR/EIS, Appendix C Economics, p. 66.

risk - are diminished by increasing flood discharges. The draft FR/EIS qualitatively addresses this issue of diminished performance due to climate change related flood discharge increases,[23] but we believe additional information is warranted.

Recommendation
The final FR/EIS should include additional information addressing how the .4% ACE CULI - or other alternative(s) - would perform given climate change sensitivity. Based on information in the draft FR/EIS it appears that costs would remain the same or similar but the likely benefits would decrease.

Mitigation
Achieve a net environmental benefit
We emphasize our belief that the net result of this project plus mitigation should be a benefit for environmental resources in the Skagit Basin. As described above, achieving a net benefit is appropriate to consider for this project because of the Corps' commitment, along with that of other federal agencies, to protecting significant ecological resources which are covered by the Puget Sound Action Agenda and of interest to Western Washington Treaty Tribes.

Our primary interest is to achieve a net environmental benefit for water quality and riparian and aquatic habitat. Based on the impacts disclosed in the draft FR/EIS, benefits should be apparent for: riparian shade; fine and large woody material and nutrient inputs; organic and inorganic debris accumulations; and terrestrial insect and riparian-associated wildlife habitat. The project plus mitigation should also result in a net improvement for off-channel habitat and tidal channels.

Restore natural processes
We also emphasize our perspective that restoring natural processes should be a key goal of any mitigation planning. Natural process type mitigation, such as setting back levees or constructing side channels, is preferred because it has a higher likelihood of providing long-term benefits. The difference between installing habitat features and the restoration of natural processes, and the importance of focusing on processes is well articulated in the Skagit Watershed Council's 2010 *Strategic Approach*[24] and numerous academic articles such as Beechie et al's 2010 BioScience article *Process-based Principles for Restoring River Ecosystems* and 2013 River Research and Applications article *Restoring Salmon Habitat for a Changing Climate.*

The *Strategic Approach* is an excellent source for Guiding Principles that should be applied to any mitigation planning on this project. Target Areas and Priority Objectives such as, "Reconnecting isolated floodplain areas and restoring mainstem edge habitat by removing relocating, or improving hydromodifications and floodplain structure or road that restrict natural floodplain and fan functions",[25] should inform mitigation planning.

Work collaboratively to develop an approved model

---

[23] "If we design for the .4% ACE scale, the urban areas would most likely still benefit from a 1% ACE protection over the 50-year project life and the benefits associated with the proposed Federal action would still be largely realized." Draft FR/EIS, Appendix C Economics, p. 67.
[24] http://www.skagitwatershed.org/uploads/council_docs/pdf/SWC_Strategic_Approach_2010.pdf.
[25] See http://www.skagitwatershed.org/uploads/council_docs/pdf/SWC_Strategic_Approach_2010.pdf at p. 7.

We also note your intention to use "an approved model" to further develop mitigation.[26] We are concerned that the draft FR/EIS does not describe the process for approving such a model. We suggest that approval depends on input from federal and state resource agencies, interested tribes and stakeholders.

Address CEQ's key mitigation concepts

We reiterate our support for following CEQ's January 14, 2011 guidance on the Appropriate Use of Mitigation and Monitoring.[27] This guidance addresses establishing, implementing, and monitoring mitigation commitments made during the NEPA process. Broadly speaking, the mitigation information in the final FR/EIS should clearly address the following key concepts from the CEQ guidance:

- Ensuring that mitigation commitments are implemented;
- Monitoring the effectiveness of mitigation commitments;
- Remedying failed mitigation; and
- Involving the public in mitigation planning.

Consider giving special attention to Section II's information on "Monitoring Mitigation Implementation" and "Monitoring the Effectiveness of Mitigation." Inclusion of implementation monitoring information in the EIS, such as identification of responsible parties, mitigation requirements, and enforcement clauses will help to ensure that those commitments are carried through permits or other agreements.

Flood inundation maps

Flood inundation maps, such as Figures 6-1 and 6-2 from the draft FR/EIS's Appendix B, should be created for all of the project's alternatives and included in the final FR/EIS. To the extent possible, we believe climate change predictions should be incorporated into the predicted flood inundation maps.

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[26] Draft FR/EIS, p. 200.

[27] CEQ, *Memorandum for Heads of Federal Departments and Agencies,* Subject: Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, January 14, 2011, http://ceq.hss.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections
The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns
EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections
EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory
EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

From: Jim Lippert
To: NWS-Skagit-River-GI
Subject: [EXTERNAL] Skagit River
Date: Wednesday, August 06, 2014 12:10:05 AM

Hannah Hadley, Environmental Coordinator August 5, 2014
U.S. Army Corps of Engineers
CENWS-EN-
ER
P.O. B.
3755
Seattle, WA 98124-3755

Re: Comment on draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation Study.

Dear Ms. Hadley:

To my knowledge, the Skagit River has yet to have a “100-year flood”, and this Skagitonian does not look forward to such.

AYK: The Skagit River has served as a transportation route, a source of water, a facility in which sewer plant outfall is disposed, a hydro-generation opportunity, and is a recreational facility, etc., with “vistas”. Point: The Skagit River has been and is multi-functional.

As a youth it is recalled stern-wheelers plied the river, and the mouth was dredged by the W.T. Preston to accommodate the stern-wheelers, tug boats, etc. Further, the “snag-boat”, removed snags in the river to accommodate the steer-wheelers, sport fishery, etc..

Sometime after World War II, the freeway/trucks replaced the stern-wheelers, and Mount Vernon turned its back on the river; i.e. it eliminated all downtowne dockages, and installed a revetment; which is now becoming a floodwall. Further, the W.T. Preston discontinued dredging the mouth of the Skagit River, removing snags. Furthermore, a jetty was installed in the south end of Swinomish Channel, and certain distributary sloughs were constricted. Point: The mouth of the Skagit River is not as Mother Nature designed/evolved it, and the mouth has been constricted: Therefore, river water backs up to be protected against.

The human body has a circulatory system, and with time our arteries/veins “plaque”. With plaque, humans get hypertension, and if not treated/abated, heart attacks occur, with most survivors having stints installed. And, if plaque constrictions are not treated/abated, aneurysms eventuate.

This left-handed octogenarian sees an analogy, with current government inclined to ignore the down streams constrictions, which creates back-up pressure on dikes; requiring higher and thicker dikes.

We know the earth is not geomorphologically static, and a river is a drainage system of/for regional rainfall. We also know man must work with nature, and that nature controls man; not vice-versa.

Summation: Building higher wider dikes eventuates in backing-up river water, which potentially relocates the location of a hydrologic aneurysm; i.e. it does not preclude a potential 100-year flood.

Roger E. Pederson

P.O. Box 245, Mount Vernon, WA, 98273-0245

Thank you,

Jim Lippert

“A hundred years from now it will not matter what my bank account was,

the type of house I lived in, or the kind of car I drove...

but the world may be different because I was important in the life of a child."

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CITY OF
Burlington
SKAGIT COUNTY, WASHINGTON INCORPORATED 1902

August 5, 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755
Seattle, Washington 98124-3755

Reference: Skagit River Flood Risk Management
General Investigation Skagit County
Draft Feasibility Report and Environmental Impact Statement

Subject: City of Burlington Comments on Report

Dear Ms. Hadley:

The selection of the Comprehensive Urban Levee Improvement (CULI) Alternative as the Tentatively Selected Plan (TSP) is consistent with the plans of the City of Burlington as a practical approach to flood hazard mitigation in the Skagit River Basin. After examining the details of the alternatives presented in the Draft Feasibility Report, the CULI is clearly the most cost effective and technically effective means of reducing flood risk to life and property.

The City of Burlington strongly supports construction of levees that are certified and accredited to 1% Annual Chance Exceedance (ACE) in order to optimize long term public safety and economic development. The report takes that goal one step further with the proposed 0.4% ACE as the preliminary National Economic Development (NED) Plan, a cost-effective approach.

The unique location of Burlington presents many challenges, with the Skagit River on two sides, the intersection of Interstate 5 and SR 20, and the BNSF Railroad mainline and east/west rail lines all coming together here in the heart of the City.

Office of the Mayor
833 South Spruce Street, Burlington, WA 98233 • Phone (360) 755-0531 • Fax (360) 755-1297
http://burlingtonwa.gov

Burlington has a long history of over 110 years as an incorporated City, and the role of the City as a regional service center has greatly expanded over the past 20+ years, primarily because of its central location. Implementing the CULI TSP is vital to protecting important transportation corridors. We recognize that it is not possible to protect all occupants in the Skagit River Basin equally. The common sense approach of reducing the flood risk to the greatest portion of the population coupled with protecting the economic generators of the region is the right approach as achieved by implementing the CULI action. The City of Burlington is home to approximately 9,500 jobs and is a significant generator of state and local sales tax revenue through its regionally significant retail center. This economic engine must be preserved and protected for the benefit of the region.

The City provides first class police and fire protection to its residents as well as to its regional neighbors. Especially, in time of emergencies, such as floods, it's crucial to sustain this valuable community infrastructure.

Dike District #12 and Burlington have been long standing partners in working to upgrade the levee system around the community and work is now in process towards the goal of levee certification. Burlington is also coordinating with the Dike District, United General Hospital and the Sedro-Woolley Wastewater Treatment Plant to get funding that will move those project components into a preliminary design phase for added flood protection. This is the right time to take action to finalize the efforts of the Corps of Engineers General Investigation and move the overall program forward.

One of the significant issues that is studied in the Draft Feasibility Report is the debris buildup behind the BNSF Bridge. The influence of debris buildup is significant in the overall flood picture as demonstrated by analysis contained within the report. The City is working with BNSF to secure funding to replace the bridge, which is approximately 100 years old, and remove the center piers that collect debris. This is a very costly venture and building the necessary private / public partnership to accomplish this goal is years in the making. This would be a good addition to the TSP.

The City also supports the optimization of the Baker Dam storage as presented in the CULI alternative. Expanding the window of reservoir drawdown and increasing volume of available storage is a low cost compliment to added levee protection.

Containing and channeling flood waters are thoroughly analyzed in the report. An equally important component in the flood fight is conveying the waters away from affected areas as quickly as possible. Gages Slough parallels the Skagit River from north of Burlington to downstream of Mount Vernon. This waterway has become stagnant over the years, and has been choked by sedimentation and vegetation. Dredging of Gages Slough and armoring it to convey vast amounts of water should be considered as an additional component of the CULI.

The City of Burlington supports inclusion of thorough evaluation of, and mitigation measures for any impacts to our neighboring communities from the implementation of the CULI TSP. As a result, Burlington asks that the CULI thoroughly identify the impacts to the City of Sedro-Woolley and outlying areas to minimize and mitigate for additional water which might be channeled their way.

And finally, the City has been gravely concerned about the outcome of FEMA's current efforts to revise and update the Flood Insurance Rate Map program. We ask that benefits derived from this TSP be coordinated with and reflected in FEMA's study.

Thank you for taking action on this long awaited program and for the opportunity to comment.

Sincerely,

Steve Sexton
Mayor

Copy to: Skagit County
City of Mount Vernon
City of Sedro-Woolley
City of La Conner
City of Anacortes

Every student graduates with the knowledge and skills for future learning and success

Sedro-Woolley School District No. 101

801 Trail Road, Sedro-Woolley, WA 98284 • (360) 855-3500 • FAX (360) 855-3574

July 30, 2014

To: Ms. Hannah Hadley, U.S. Army Corps of Engineers
From: Phil Brockman, Superintendent, Sedro-Woolley School District
Re: Skagit River General Investigation Study

On behalf of the Sedro-Woolley School District, I would like to voice our concern in regard to the Skagit River General Investigation Study.

Based on information from the study it is very evident that several of the school district schools will or may be affected by the raising of levees west of Sedro-Woolley. We are very concerned that Clear Lake Elementary will be highly affected by future flooding. We understand that Clear Lake Elementary is located in the flood zone presently, but raising levee levels will quite likely mean that the school facility will incur even more damage when flooding occurs. In addition to our concern about Clear Lake Elementary, we also have concerns about Central and Mary Purcell Elementary schools, as well as Sedro-Woolley High School. The concern is that these three schools will be affected by flooding, especially after comments made by public officials that Fidalgo Street would more than likely be under water when flooding occurs. Based on conversations with the Sedro-Woolley City officials, we are also very concerned that the wastewater treatment plant (located between Sterling and Alexander Streets) will not be adequately protected from flooding, resulting in the overwhelming of the system. If this is the case, there would be a major safety issue with our nearby schools and families.

Our concern is not only with our school facilities, but with displaced families and school closures, resulting in property damage, monetary impacts and loss of instruction, potentially for a significant period of time. The emotional toll placed on our families and more importantly, our children, would be devastating and in some cases irreversible.

In conclusion, we ask that before final decisions are made to raise levee levels, that the corps study the impacts of the tentatively selected project on our schools and school community. And allow the school district to have further comment before

selecting a final project. We ask that if the decision is to raise levee levels, that there are mitigations made to reduce the impact on our school facilities and families. It must be noted that we are publicly funded and have been highly supported by our school community that spans nearly 300 square miles. As public officials and stewards of public funds, it is in all of our best interests to do whatever possible to minimize the flood risk to our school community. Please feel free to contact me for further discussion or for any clarifications.

Sincerely,

Phil Brockman
Superintendent
Sedro-Woolley School District

Skagit River G neral Investigation Study

Public Review of D aft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 20:

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

We are upset that corporate businesses are being put ahead of our families homes.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this stud ? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (plea e print):

Name: Alan Burke Affiliation (Optional): _____

Address: 23700 Jennings ave

City: Sedro-Woolley State: WA Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U. ny Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

AUG 4 2014
SEATTLE DIST.

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 9812

Please fo d form in half and tape closed to ail

in downtown Mt. Vernon is not going to stop seepage to the building. Water will back up in the restrooms in the stores. I worked there a few years and seen that happen.

Building up the dikes can not go on forever. There has to be some dredging in the future. It just makes common sense. They need to listen to the old timers soon. So much money is used to study the sewer but nothing is accomplished.

This is frustrating to local citizens.

Hope someone reads this!

A Concerned Citizen.

Jean A. Hanson
Unit A
2601 N Laventure Rd.
Mount Vernon, WA 98273-8559

US Army Corps of Engineers:

Regarding our house at 1004 Jameson, Sedro-Woolley, Washington

My family does not support the Skagit Comprehensive Urban Levee Plan. We own a house on Jameson in Sedro-Woolley for almost 30 years and it has never flooded and does not require costly flood insurance. If you protect Burlington and their Costco's and Home Depots (where they built in a flood prone area) at the expense of thousands of people east of Burlington and in Sedro-Woolley – that's wrong! You are transferring the risk from corporations to live people. If Costco floods for a day, maybe their stock drops for a ½ day a buck? Then they re-open in a week. Sedro-Woolley could have thousands affected and homeless not considering the extra costs of flood insurance in their housing costs. It would ruin lives.

Also, both Hwy 9 and Hwy 20 that serve Sedro-Woolley could be underwater and public safety would be in jeopardy transferring people to hospitals and first responders losing mobility. We need to get the water out of the Skagit River System not back it up.

Please don't save physical businesses over people. Find a way to get the water out like a by-pass.

Juile and Mike Anderson

sedromike@yahoo.com

July 18, 201

RE: Hannah Hadley,

I have served on the flood control
ommnity in Skagit County Sence
1975, and as president of the Skagit
Coenty Drainage Commision all
but one year of its epistance.

After too many years and many
Millions of dollars, I find that
the G I Study flaw ed.
The COE tentatively selected plan
didnt have the votes on the Skagit
County Flood Control Commit to
recommend it to the County
Commissioners. All that it does
is make a bad situation worse.

I found about the water
it puts in the Sedro Woolley School
at Clear Lake, or the Clear Lake Fire
Department.

I also found about flooding
easements for Sedro Woolley Sterling
nookachamps, and the Samish !

More water must flow down the
Skagit River to the Bay to reduce flood
risk. Dike District 12 levees are
the main problem. These levees force
water up stream above Sedro-Woolley
and down stream to the other dikes
districts, they would not assist as
they are without C.O.E. help.

Obstructions placed in the river

Need Remodeling but not
limited to:

1. The C.O.E. Dike at Goat Island
2. Fill at Blakes Resort
3. Skagit County North Fork Bridge
4. Mount Vernon dump on West Side
5. Fill on the river side of Whitmarsh Road
6. Rip Rap levee above the Railroad Bridge at Burlington
7. Dike Districts 12's Wing Dike from Strawberry Bar across
8. Rip Rap placed in Skagit River for so called fish Groins
9. The old Rail Road Bridge at Sedro-Woolley.

The one item in the G.I. Study tentatively selected plan that makes any sense is more water storage behind the dams and nonstructural items.

Please add this letter to the comments for the G.I. Study.

Respectfully,

Gene Nelson

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

I have lived @ the Cascade Lawn, Fairhaven Ave. in Burlington since the early 1900's. This is the first flooding in Burlington I've ever experienced. The reports of flooding have declined the previous economic prosperity to zone. All of that subsequent development was in direct violation of the Comprehensive Plan, etc. Mall, Outlets, etc. Has all the vast majority of the water been Sedro-Woolley over the years. And now, you are planning to make our S-W residents take on the flood risk. This is the proverbial "thing due". This is unacceptable to our community. Flooded in more than 100 years - but now we are [illegible] - what a shabby trick.

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☑ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☐ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: _____ Affiliation (Optional): _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than ~~July 21~~, 2014. Thank you!
August 5, 2014

SEATTLE WA 980
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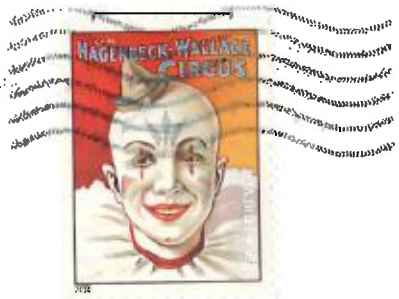

AUG 8 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

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Skagit River General Investigation Study

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Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

This plan needs to protect all people living within the Skagit River Basin, not just Burlington and Mt Vernon. And this plan certainly shouldn't protect some while putting others at further jeopardy

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name: Marjean Buske Affiliation (Optional): _____

Address: 312 Talcott St

City: Sedro Woolley State: Wa Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit.River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

AUG 0 8 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail

Memorandum

Northwest Hydraulic Consultants
16300 Christensen Road, Suite 350
Seattle, WA 98188
206.241.6000
206.439.2420 (fax)

DATE: 22 May 2014 NHC PROJECT: 200177

TO: Dan Lefeber

COMPANY/AGENCY: Skagit County Dike, Drainage and Irrigation Improvement District 12 (DD12)

FROM: Alex Anderson, P.E.; Malcolm Leytham, Ph.D., P.E.

SUBJECT: Hydraulic Effects of Proposal to Improve Dike District 12 Levee from SR-20 to the BNSF Bridge

Introduction

The Skagit River Valley is subject to periodic flooding, and seeking ways to manage the flood risk is a task undertaken by local municipalities, Skagit County, and federal agencies. The City of Mount Vernon is constructing a floodwall to increase the level of flood protection in their downtown area, and the U.S. Army Corps of Engineers (USACE), with Skagit County as local sponsor, recently completed a draft Skagit River General Investigation Study (Skagit G.I.) that looked at various valley-wide flood control alternatives.

Northwest Hydraulic Consultants (NHC) has served as the hydrology and hydraulics contractor for both Skagit County and the USACE on the Skagit G.I. study, and as a result has a thorough and up-to-date understanding of the hydraulic models developed for the Skagit River. In late 2013, the City of Burlington retained NHC to use the most recent hydraulic models from the Skagit G.I. study to evaluate the impact of improving a portion of the Dike District 12 levee. In early 2014, DD12 became the contracting entity for this work.

Project Description

The proposed levee improvements would take place along Burlington's eastern flank. The upstream end would be along Lafayette Road near where the road abuts State Route 20, and the project would follow the existing levee alignment downstream to Whitmarsh Road, just upstream from where the levee ties in to the BNSF railroad embankment upstream of the BNSF Bridge. Figure 1 shows the location of the proposed work.

The improvements would consist of raising the height of the levee by around 3-4 feet in most areas. The width would also be increased as needed to accommodate the extra height.

Model Description

To simulate the effects of the proposed works, NHC used the most recent (2013) "existing condition[1]" hydraulic models and followed the same methodology developed for the Skagit G.I. study. A one-

[1] The existing condition model includes the Mount Vernon floodwall, which is still under construction.

Figure 2 are based on distance measured in the latest Skagit G.I. HEC-RAS model. These river miles may differ slightly from other sources.

The effect of the project on the volume of water spilled from the main channel to the floodplain upstream from the BNSF Bridge is summarized in Table 2. Table 2 shows that the total amount of water leaving the main channel between the BNSF Bridge (river mile 17.54) and the State Route 9 Bridge (river mile 22.29) is reduced by 4,000-5,000 acre-feet, though certain levee segments experience an increase in overtopping.

Table 2: Volume of Water Spilt from Main Channel onto Floodplain in 100-year Flood between BNSF and State Route 9 bridges, Right Bank

	Total Volume Onto Floodplain (acre-feet)			
	With Debris		No Debris	
Levee Segment	Existing	Project	Existing	Project
State Route 9 to Upstream End of Project	49,774	66,659	39,618	45,835
Project Segment	35,363	0	18,245	0
Downstream End of Project to BNSF Bridge	22,403	36,945	12,528	19,336
Total	**107,539**	**103,604**	**70,391**	**65,171**

Table 3 shows the impact of the project on the 100-year peak flow downstream from the BNSF Bridge for the two debris assumptions. Differences between the 100-year peak flow at Sedro-Woolley and below the BNSF bridge are the combined result of storage of flood waters upstream from the BNSF bridge (primarily in the Nookachamps area) and spill from the river channel onto the floodplain. The increased water level upstream from the BNSF Bridge with the project in place results in an increase in flow through the bridge opening of roughly 2,000 cfs with debris load and about 3,000 cfs without debris. The effect of the debris load is to reduce the peak flow passing the BNSF Bridge by about 16,000 cfs under existing conditions and by 18,000 cfs with the project in place.

Table 3: Peak Flow Downstream of BNSF Bridge

	Peak 100-Yr Flow Downstream of BNSF Bridge (cfs)	
	No Bridge Debris	6,000 sq. ft. Bridge Debris
Existing	182,930	166,360
Project	186,320	168,350

Maps showing the difference in 100-year flood level at every point in the valley are shown in Figures 3 and 4 for zero and 6,000 sq. ft. bridge debris, respectively. Black dots representing population aid in understanding the distribution of positively and negatively impacted parties. As the figures show, reduction in flood depth occurs in the densely populated areas of Burlington, while the depth increases are in more rural settings. Figures 5-6 show the existing condition absolute depths, rather than depth differences, to provide a baseline condition to keep in mind when evaluating the differences.

As shown in Figures 3 and 4, the improved levee would be expected to lower flood levels in the urban core of Burlington by around 0.3 feet to 1 foot (no debris), or 0.5 feet to 1 foot (with debris). Note, however, that flooding would still occur in Burlington, just at a lesser depth. The remnant flooding that

would still occur is a result of water spilling over SR-20 upstream of the project and flowing southwest behind the levee, as well as spill over the short unimproved segment between the BNSF Bridge and the downstream end of the project. Smaller reductions in flood level also occur in the floodplain west of Burlington on either side of Bayview Ridge. The remnant flooding on the right bank (i.e., the Burlington & Sedro-Woolley side) was quantified in Table 2.

The proposed project would cause an increase in flood depth in other areas of the floodplain. The floodwaters that under existing conditions overtop into Burlington in the project reach are displaced, resulting in increased river levels and hence larger overtopping flows elsewhere. The increase is around 0.2 feet (without debris) to 0.6 feet (with debris) in the river channel immediately adjacent to the project, and generally diminishes with distance from the project. The areas that generally see the most widespread increases are the rural areas west of Sedro-Woolley and east of I-5 south of Mount Vernon.

In the rural areas west of Sedro-Woolley, increased overtopping of SR-20 from Harts Slough results in increases of greater than 0.5 feet (with debris) over a fairly large extent. Without bridge debris, the increase in this area is less than 0.5 feet and limited in extent.

South of Mount Vernon, I-5 experiences increased overtopping which results in depth increases of up to 3 feet (with debris).

Examining Figures 3 through 6, it is apparent that larger differences in flood depth occur in the "with debris" scenario than "without debris" for areas both upstream and downstream from the BNSF bridge. However, the total inundated acreage downstream from the BNSF Bridge is less with debris than without debris due to the lower flows, with or without the project.

Areas that experience the largest changes in depth are typically areas where there is simply no flooding in the existing case, but where inundation is experienced with the project in place, or vice versa. These areas of large change tend to be located near the edge of the flood's footprint area.

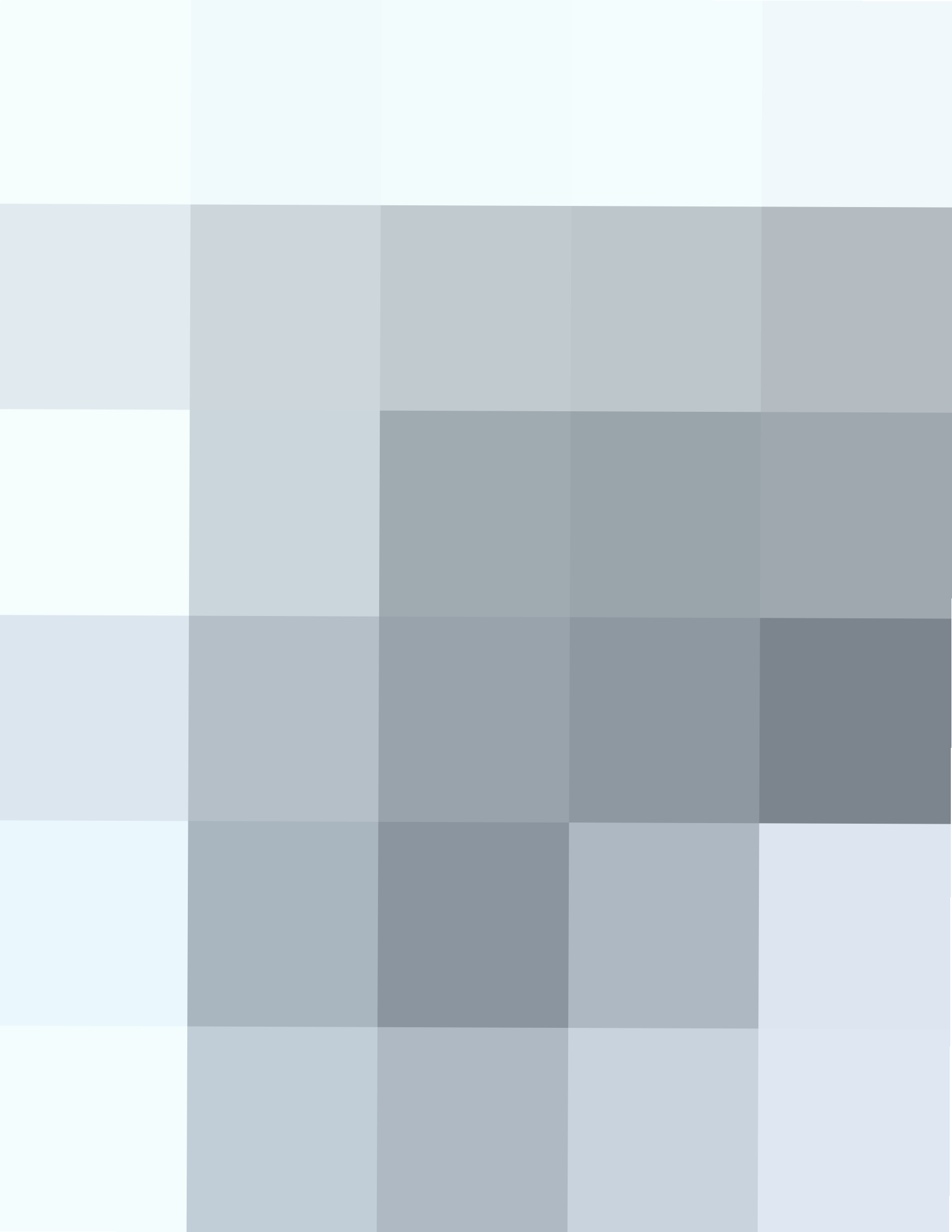
The large changes near the edge of the footprint are caused primarily by elevated roadways or natural high ground barriers that protect lower lying areas behind them. If the water level under existing conditions is just on the cusp of overtopping these high ground barriers, small increases in water level can lead to large changes in flood depth and extent in the low lying areas behind them. Examples include the area along the Samish River just upstream of I-5 and the area east of I-5 south of Mount Vernon. In the case of the area east of I-5 and south of Mount Vernon, water is just beginning to overtop I-5 in the existing case (with debris). With the project, water is only marginally higher west of I-5, but the increase in overtopping is enough to raise water levels east of the highway by up to several feet. The large difference does not occur in the "without debris" scenario because I-5 is already overtopped by the higher flows experienced without debris. Note that the inverse situation also occurs, resulting in sections of land with large reductions in flood depth, such as the area east of La Conner.

Discussion

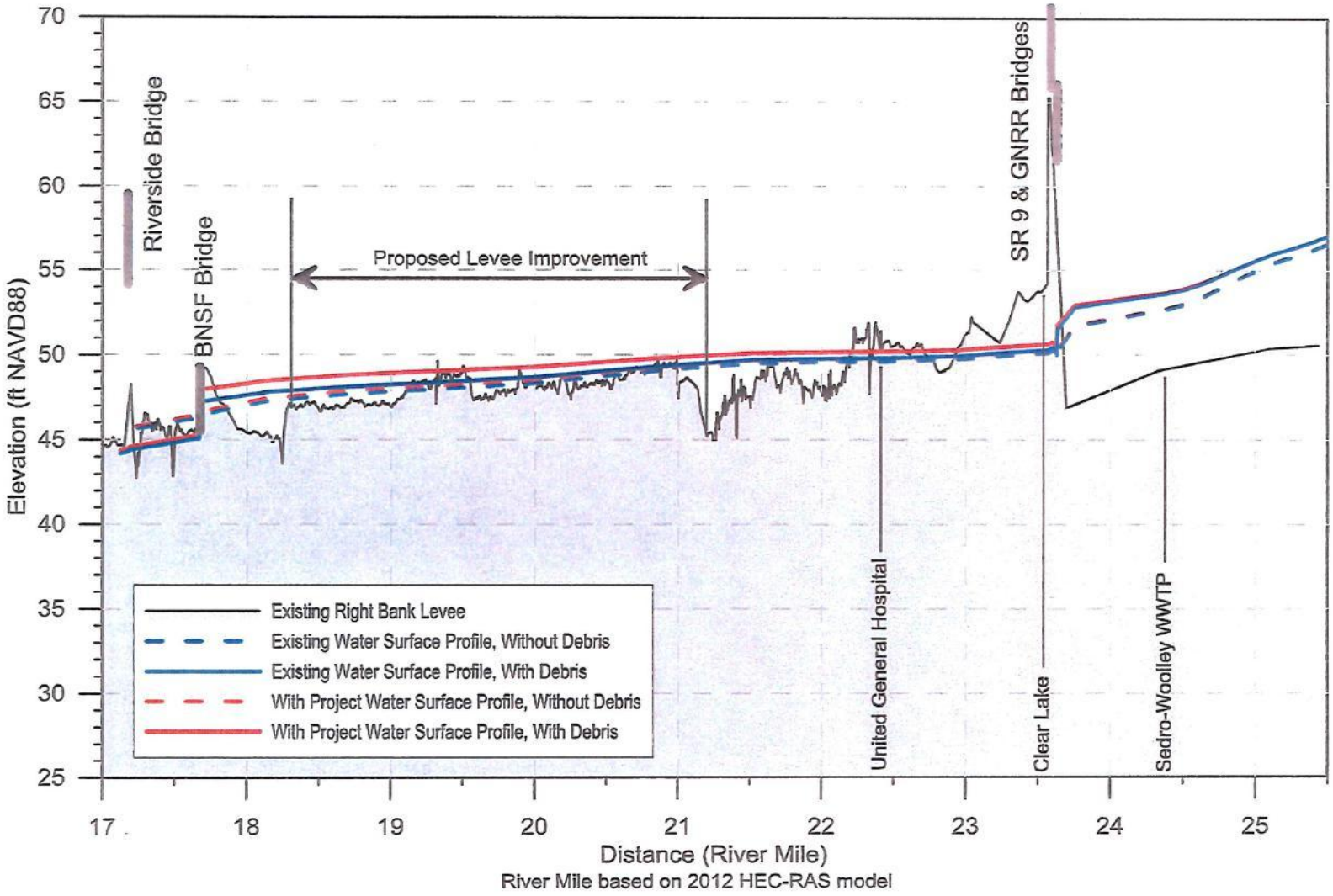
The impact of the proposed levee improvement was studied using a hypothetical 100-year flood. It is useful to provide some context on the magnitude of this flood compared with other recent floods. Table 4 shows the peak flows at Sedro-Woolley of the 10 through 100-year hypothetical floods, as well as the historic floods of 1995, 2003, and 2006. Estimated return intervals based on these peak flows are also shown. It is evident that the 100-year flood used for project impact analysis is very large in comparison to any of the recent floods that have occurred, which are equivalent to approximately 15 to 25-year floods.

There are several sources of uncertainty in the analysis presented above. The level of debris that accumulates on bridge piers is one significant variable, but was dealt with directly by modeling two debris conditions. Sediment scour is a related source of uncertainty - some riverbed scour would be expected in a large flood such as the 100-year, and would be exacerbated around bridges with debris buildup. The HEC-RAS model uses a fixed bed, which is analogous to assuming the debris loads at the bridges are the net blocked area (i.e., total area blocked by debris less additional flow conveyance area resulting from scour) rather than the gross area. The HEC-RAS model was calibrated based on the historic floods shown above, but these floods were all significantly smaller than the 100-year flood being used to evaluate the project. The Flo2D model of the floodplain is not calibrated since there is insufficient flooding data on the floodplain to do so. We have not included any emergency flood fighting measures that may or may not be performed in practice. Additionally, there is uncertainty in the magnitude of the 100-year flood, as it was derived from a weighted-average approach from a range of possibilities, and it makes no attempt to account for effects of future climate change.

Figures

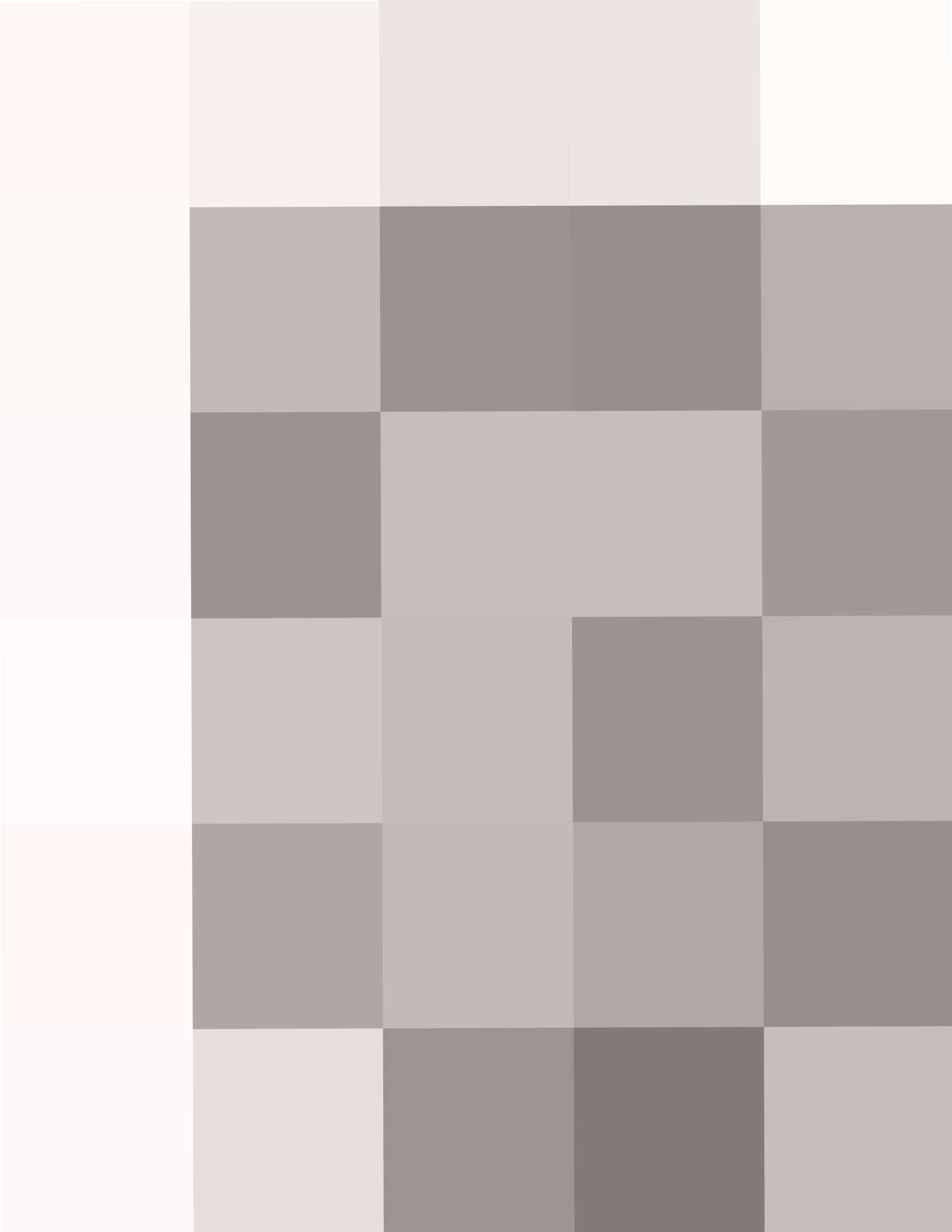


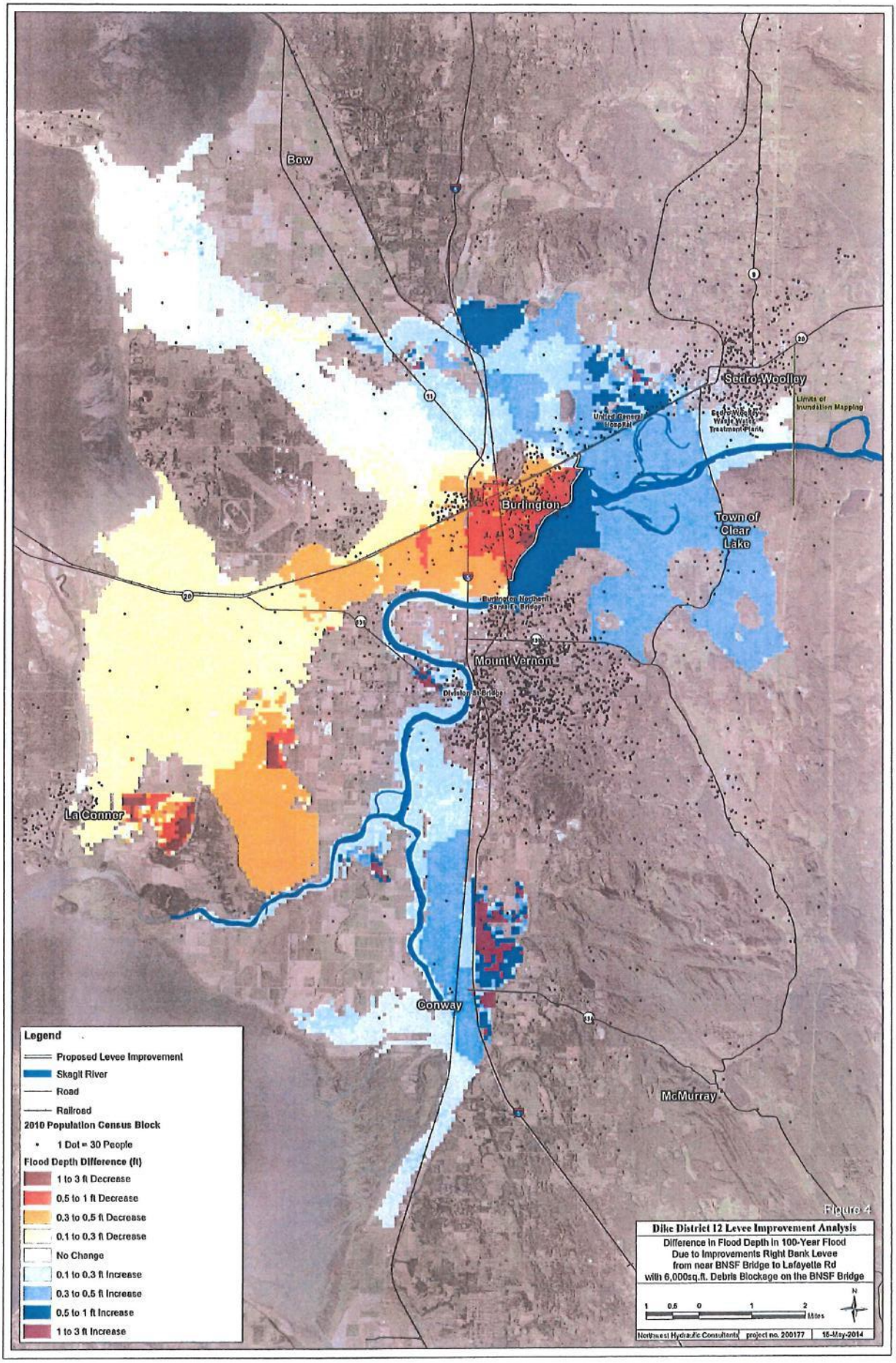
100-Year Flood Water Surface Profiles, With and Without Proposed Levee Improvement
Skagit River, River Mile 17.5 - 25.5

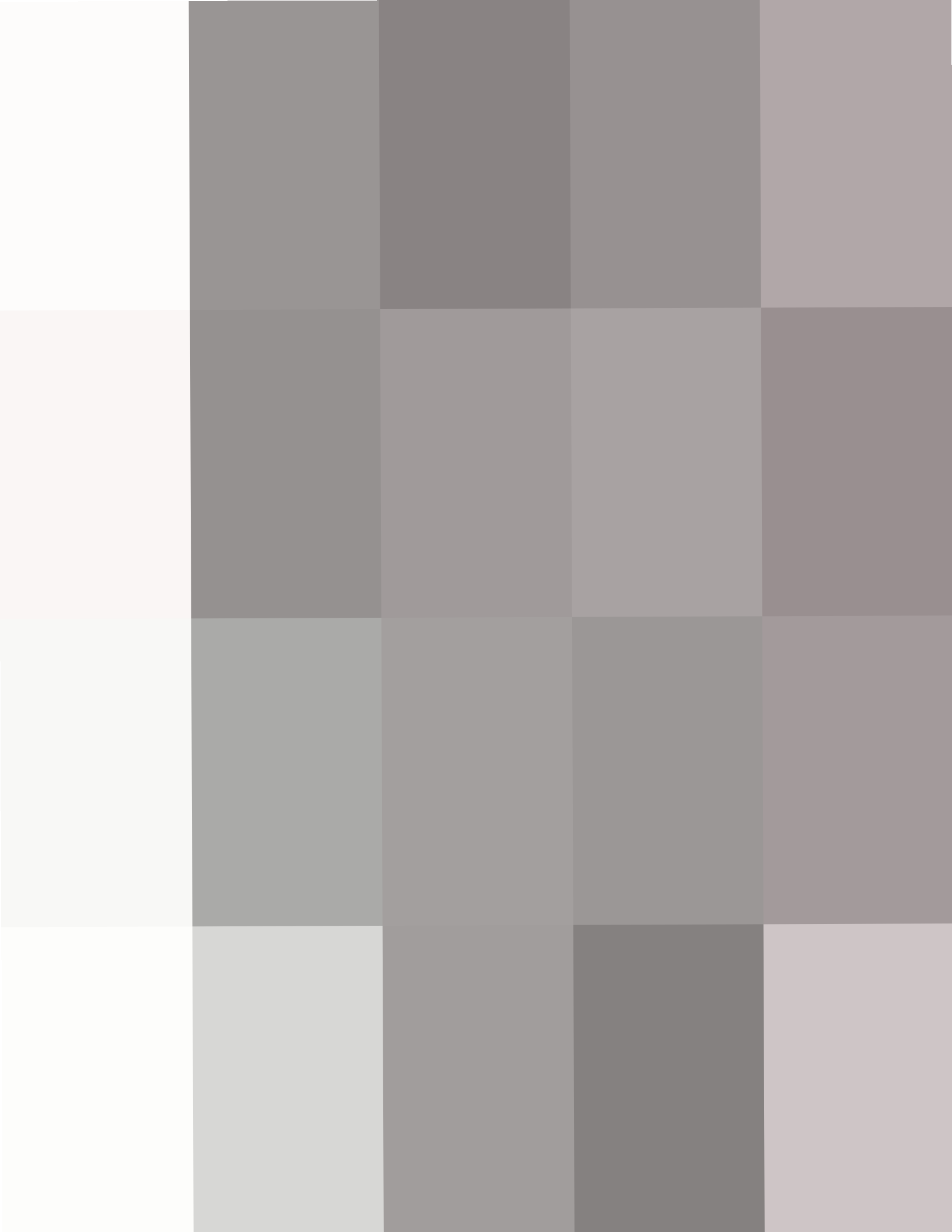


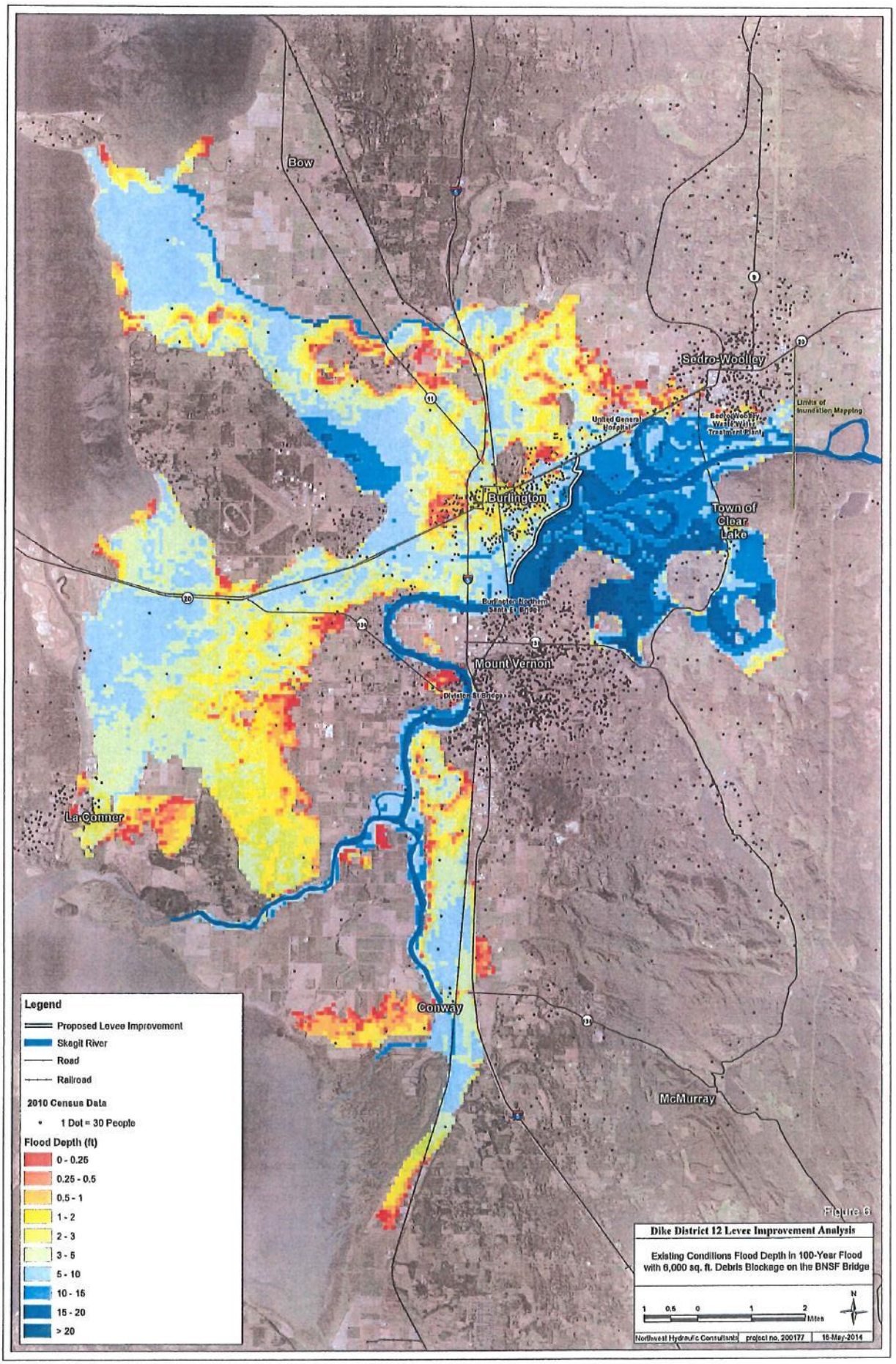
Notes:
1) Existing levee profiles based on 2012 HEC-RAS model developed for the Skagit River General Investigation project. These profiles differ slightly from existing levee profile in plans provided by City.
2) Zero and 6,000 sq. ft. debris blockages were assumed for the BNSF bridge.

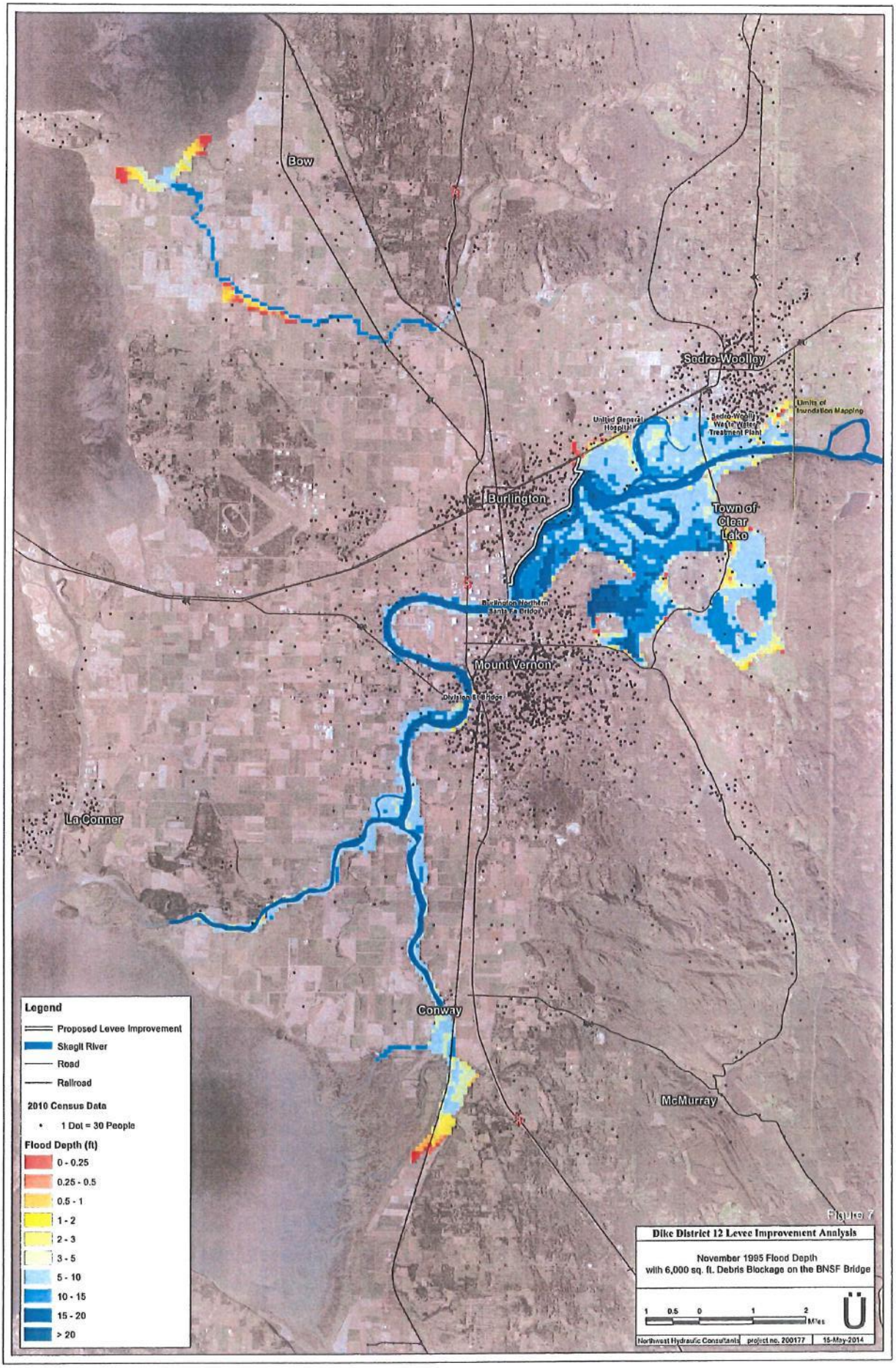
Figure 2

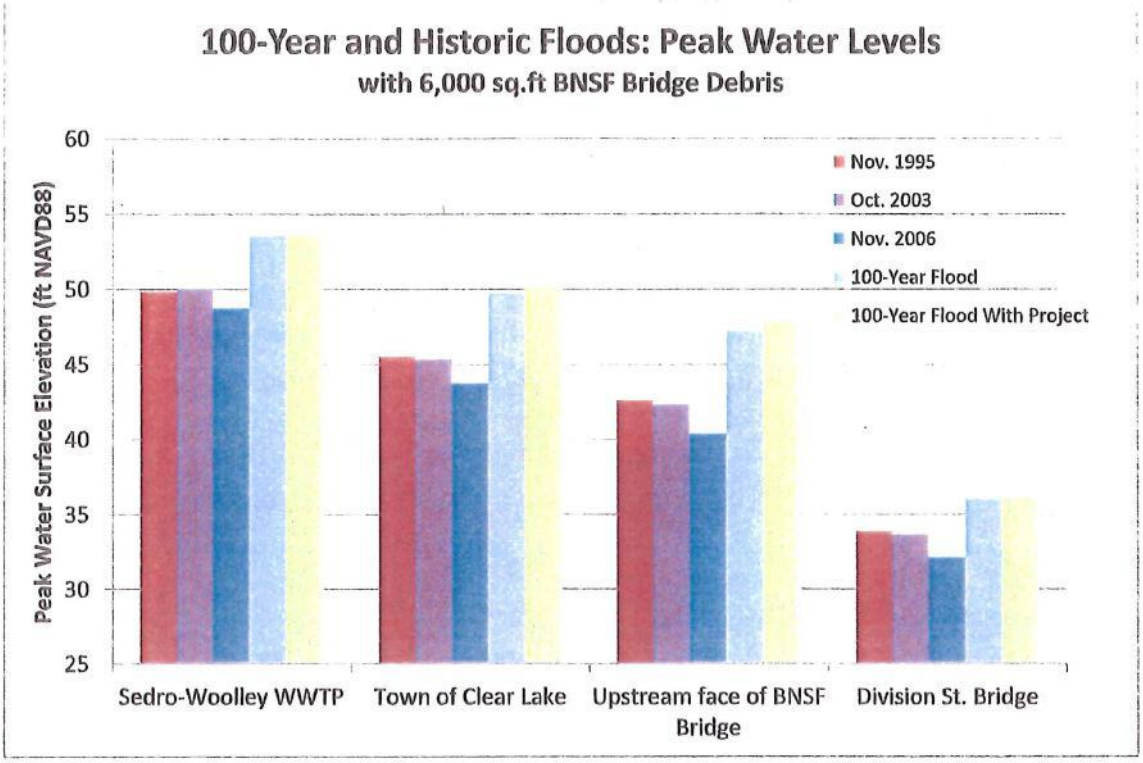



Bow
Sedro-Woolley
Limits of Inundation Mapping
Burlington
Town of Clear Lake
Mount Vernon
La Conner
Conway
McMurray
Legend
Proposed Levee Improvement
Skagit River
Road
Railroad
2010 Population Census Block
1 Dot = 30 People
Flood Depth Difference (ft)
1 to 3 ft Decrease
0.5 to 1 ft Decrease
0.3 to 0.5 ft Decrease
0.1 to 0.3 ft Decrease
No Change
0.1 to 0.3 ft Increase
0.3 to 0.5 ft Increase
0.5 to 1 ft Increase
1 to 3 ft Increase
Figure 4
Dike District 12 Levee Improvement Analysis
Difference in Flood Depth in 100-Year Flood
Due to Improvements Right Bank Levee
from near BNSF Bridge to Lafayette Rd
with 6,000sq.ft. Debris Blockage on the BNSF Bridge
1 0.5 0 1 2 Miles
N
Northwest Hydraulic Consultants project no. 200177 15-May-2014




Bow
Sedro-Woolley
Limits of Inundation Mapping
United General Hospital
Sedro-Woolley Water-Waste Treatment Plant
Burlington
Town of Clear Lake
Burlington Northern Santa Fe Bridge
Mount Vernon
Division St Bridge
La Conner
Conway
McMurray
Legend
Proposed Levee Improvement
Skagit River
Road
Railroad
2010 Census Data
1 Dot = 30 People
Flood Depth (ft)
0 - 0.25
0.25 - 0.5
0.5 - 1
1 - 2
2 - 3
3 - 5
5 - 10
10 - 15
15 - 20
> 20
Figure 6
Dike District 12 Levee Improvement Analysis
Existing Conditions Flood Depth in 100-Year Flood with 6,000 sq. ft. Debris Blockage on the BNSF Bridge
1 0.5 0 1 2 Miles
N
Northwest Hydraulic Consultants | project no. 200177 | 16-May-2014


Bow
Sedro-Woolley
Limits of Inundation Mapping
United General Hospital
Sedro-Woolley Water Quality Treatment Plant
Burlington
Town of Clear Lake
Burlington Northern Santa Fe Bridge
Mount Vernon
Division St. Bridge
La Conner
Conway
McMurray
Legend
Proposed Levee Improvement
Skagit River
Road
Railroad
2010 Census Data
1 Dot = 30 People
Flood Depth (ft)
0 - 0.25
0.25 - 0.5
0.5 - 1
1 - 2
2 - 3
3 - 5
5 - 10
10 - 15
15 - 20
> 20
Figure 7
Dike District 12 Levee Improvement Analysis
November 1995 Flood Depth
with 6,000 sq. ft. Debris Blockage on the BNSF Bridge
1 0.5 0 1 2 Miles
Northwest Hydraulic Consultants
project no. 200177
15-May-2014



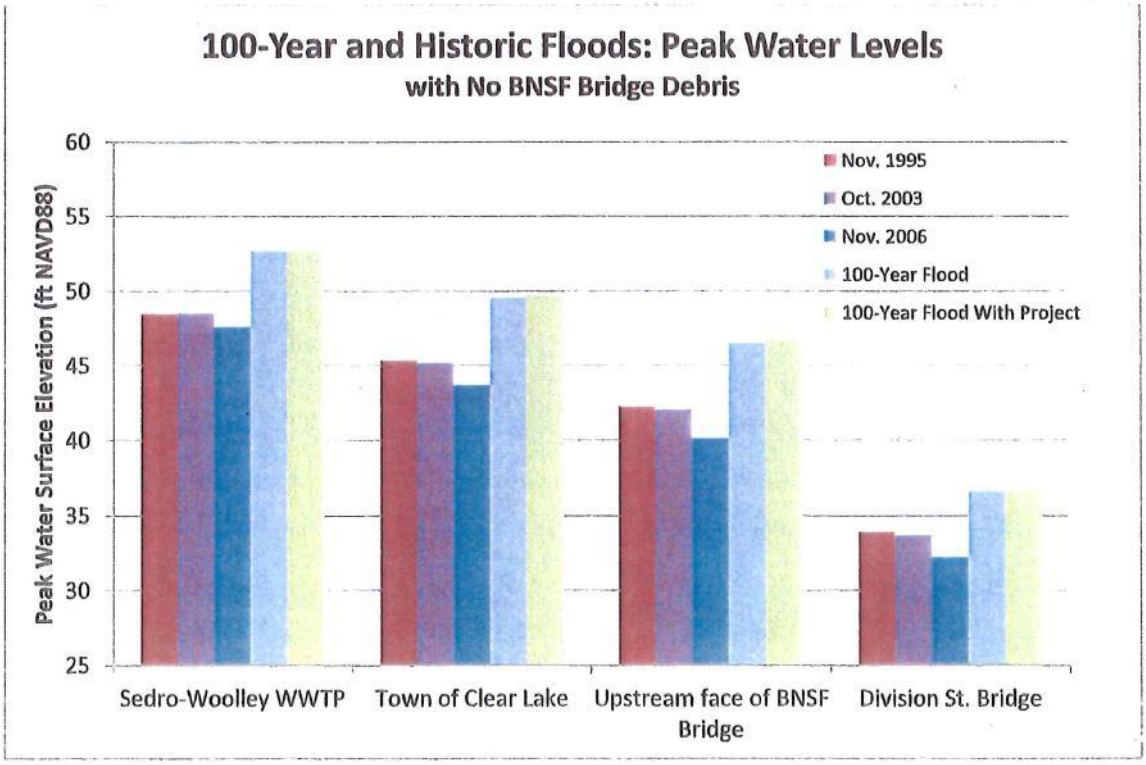
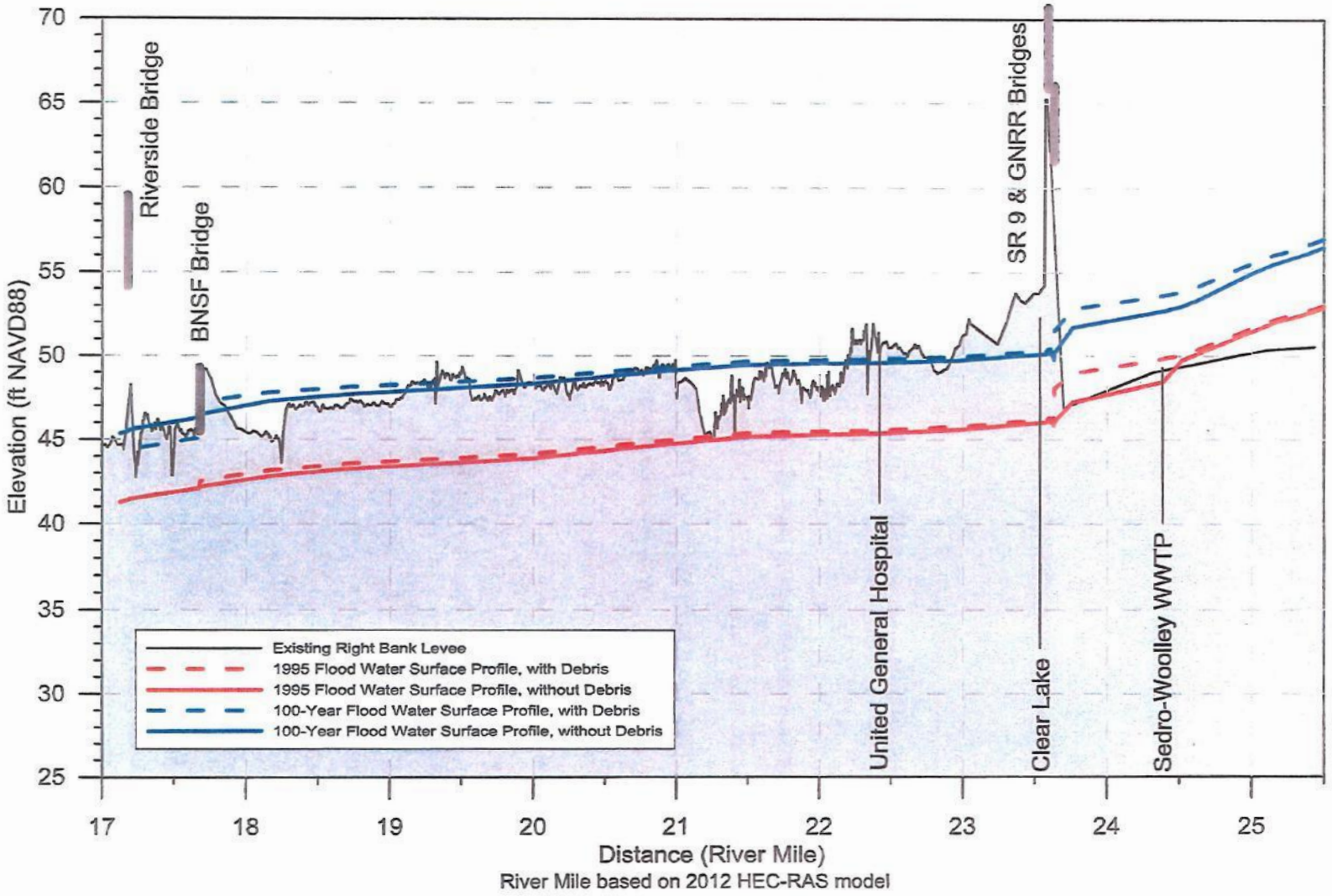


Figure 8: Comparison of Modeled Peak Water Levels in Historic and 100-Year Floods

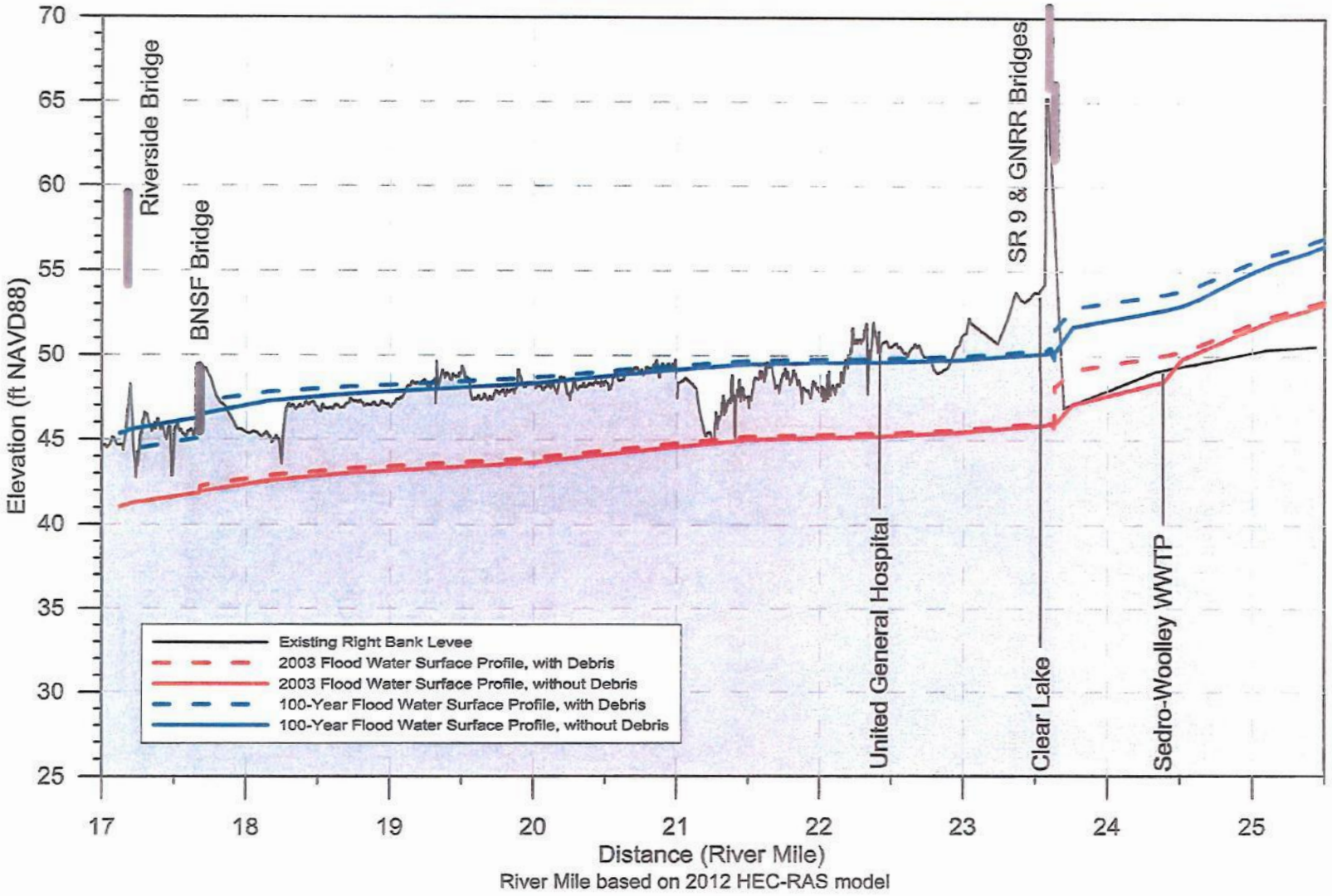
1995 and 100-Year Flood Water Surface Profiles, Existing Levee, With and Without Bridge Debris
Skagit River, River Mile 17.5 - 25.5



Notes:
1) Levee profiles are based on the 2012 HEC-RAS model "existing condition" developed for the Skagit River General Investigation project. These profiles differ slightly from the existing levee profile in plans provided by the City of Burlington.
2) A zero and 6,000 sq. ft. debris blockage was assumed for the BNSF bridge.

Figure 9

2003 and 100-Year Flood Water Surface Profiles, Existing Levee, With and Without Bridge Debris
Skagit River, River Mile 17.5 - 25.5



Notes:
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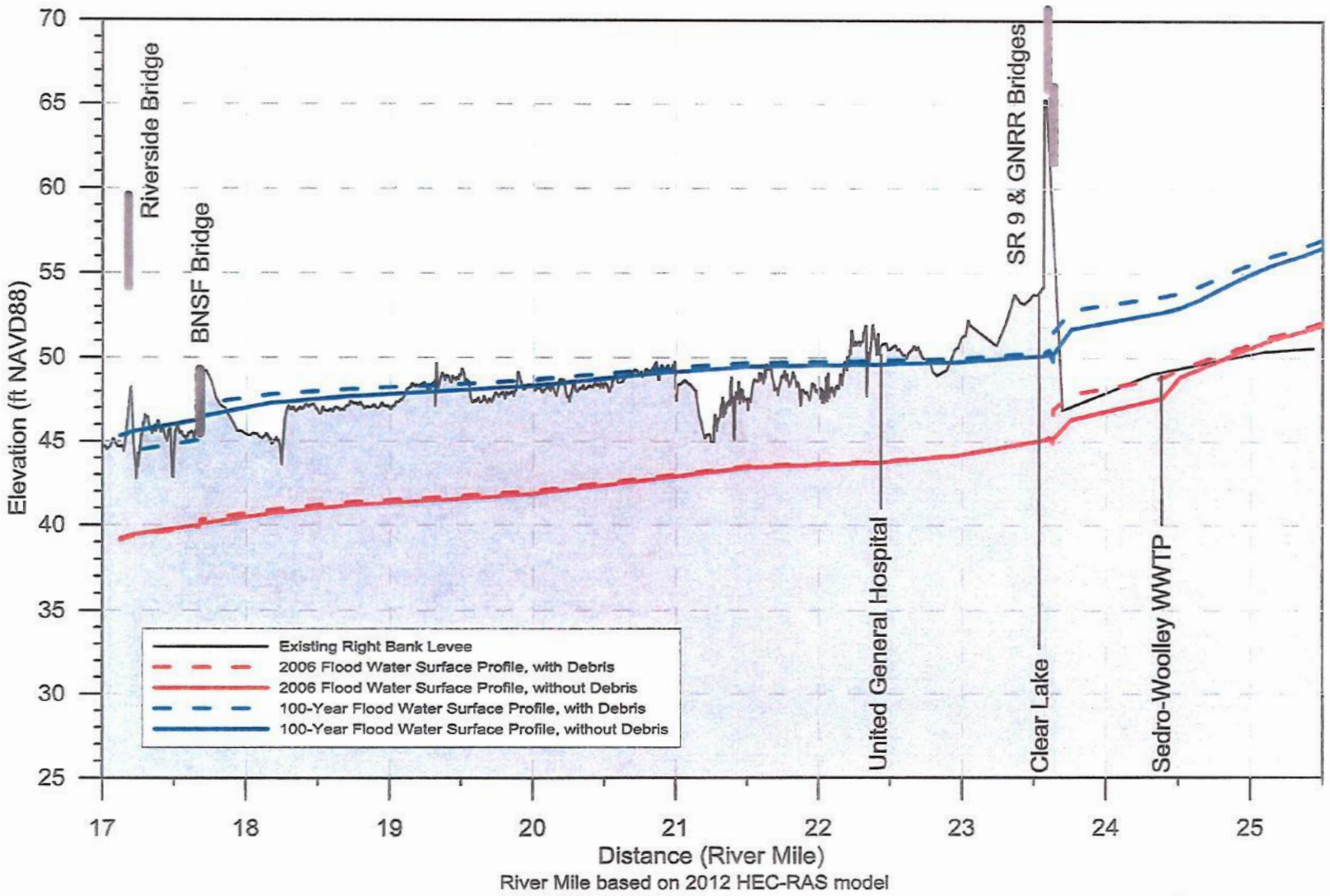
2) A zero and 6,000 sq. ft. debris blockage was assumed for the BNSF bridge.

Figure 10

2006 and 100-Year Flood Water Surface Profiles, Existing Levee, With and Without Bridge Debris
Skagit River, River Mile 17.5 - 25.5



Notes:
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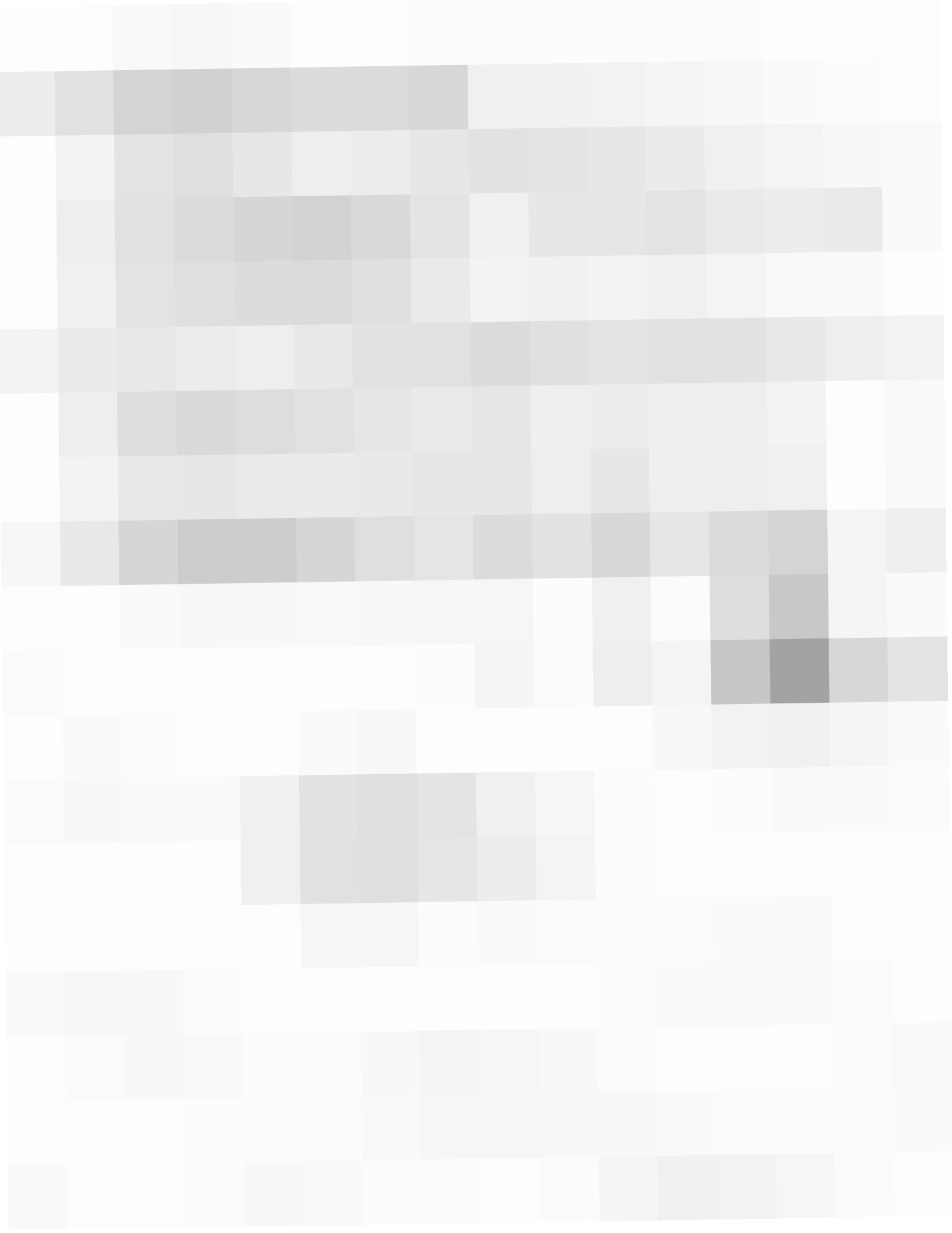
2) A zero and 6,000 sq. ft. debris blockage was assumed for the BNSF bridge.

Figure 11



Hannah Hadley, Environmental Coordinator
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. B3755
Seattle, WA 98124-3755

August 5, 2014

Re: Comment on draft Feasibility Report and Environmental Impact Statement for the Skagit River Flood Risk Management General Investigation Study.

Dear Ms. Hadley:

To my knowledge, the Skagit River has yet to have a "100-year flood", and this Skagitonian does not look forward to such.

AYK: The Skagit River has served as a transportation route, a source of water, a facility in which sewer plant outfall is disposed, a hydro-generation opportunity, and is a recreational facility, etc., with "vistas". Point: The Skagit River has been and is multi-functional.

As a youth it is recalled stern-wheelers plied the river, and the mouth was dredged by the W.T. Preston to accommo0date the stern-wheelers, tug boats, etc. Further, the "snag-boat", removed snags in the river to accommodate the steer-wheelers, sport fishery, etc..

Sometime after World War II, the freeway/trucks replaced the stern-wheelers, and Mount Vernon turned its back on the river; i.e. it eliminated all downtowne dockages, and installed a revetment; which is now becoming a floodwall. Further, the W.T. Preston discontinued dredging the mouth of the Skagit River, removing snags. Furthermore, a jetty was installed on the south end of Swinomish Channel, and certain distributary sloughs were constricted. Point: The mouth of the Skagit River is not as Mother Nature designed/evolved it, and the mouth has been constricted: Therefore, more water backs up to be protected against.

The human body has a circulatory system, and with time our arteries/veins "plaque". With plaque, humans get hypertension, and if not treated/abated, heart attacks occur, with most survivors having stints installed. And, if plaque constrictions are not treated/abated, aneurysms eventuate.

This left-handed octogenarian sees an analogy, with current government inclined to ignore the down streams constrictions, *which creates back-up pressure on dikes*; requiring higher and thicker dikes.

We know the earth is not geomorphologically static, and a river is a drainage system of/for regional rainfall. We also know man must work with nature, and that nature controls man; *not vice-versa.*

Summation: Building higher wider dikes eventuates in backing-up river water, which potentially relocates the location of a *hydrologic aneurysm*; i.e. it does not preclude a potential 100-year flood.

Roger E. Pederson

P.O. Box 245, Mount Vernon, WA, 98273-0245

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

We want to hear from you!!

Please take the time to provide your comments. You can submit your comments by:

- ✓ Leaving this form with us tonight at the public meeting or at Skagit County Public Works Office
- ✓ Putting a stamp on this form and sending by regular mail
- ✓ Contacting Hannah Hadley at Skagit.River@usace.army.mil or at (206) 764-6950

Remarks, Comments, Concerns

If the corps should go forth with this plan it will cause many more problems than we've had in the previous years.

I do not feel that the businesses involved should have priority over all the homes that are affected on the flood plain in Burlington & Mt. Vernon knew about the chances they were taking and I don't feel we should suffer for their poor judge

I think it would be very poor judgment on the corps if they pursue this poor plan. Let the people of the flood way take their chances with life & property as they knowingly built in the flood & have

US Army Corps of Engineers
Seattle District

Skagit River General Investigation Study

Public Review of Draft Feasibility Study and Environmental Impact Statement
June 6 – July 21, 2014

Is there anything additional that should be addressed or considered during this study? Please be specific.

_____

_____

Do you reside within the Skagit River Basin? ☒ Yes ☐ No

Would you like to be added to the Skagit River General Investigation Study mailing list? ☒ Yes ☐ No

If yes, provide us with your contact information so we can add you to the project mailing list (please print):

Name. GUS F. SURYAN Affiliation (Optional): _____

Address: 635 JENNINGS ST.

City: SEDRO-WOOLLEY State: WA. Zip: 98284

Email: _____

For more information or to submit other comments, please contact Hannah Hadley, U.S. Army Corps of Engineers at Skagit River@usace.army.mil or at (206) 764-6950. Comments must be received no later than July 21, 2014. Thank you!

AUG 0 8 2014

Ms. Hannah Hadley
U.S. Army Corps of Engineers
CENWS-EN-ER
P.O. Box 3755, Seattle, WA, 98124

Please fold form in half and tape closed to mail