

FINAL Meeting Minutes
Stillaguamish River Comprehensive Flood Study
Planning Advisory Committee Meeting
January 30, 2001, 2:00pm – 4:00 p.m.

Attendees

Chuck Hazleton, Stillaguamish Flood Control District
Max Albert, Stillaguamish Flood Control District
Bobbie Eldridge, Stillaguamish Flood Control District
Mike McCallister, Snohomish County Dept. of Emergency Management
Bill Blake, City of Arlington
Chris Toms, Washington Department of Natural Resources
Dave Burdick, Washington Department of Ecology
James Yapp, Snohomish County, Parks Department
Mike Chamblin, Washington Department of Fish and Wildlife
Duane Weston, Pilchuck Tree Farm
Patricia Lambert, Snohomish County, Surface Water Management
Vaughn Collins, Snohomish County, Surface Water Management
Toni Turner, Snohomish County, Surface Water Management

Introductions

After committee introductions, Pat Lambert was introduced. She is the new Planner for Snohomish County Surface Water Management and will be assisting on several flood hazard plans, including the Stillaguamish River basin plan. In addition, she will be working on Water Resource Inventory Area 8, Cedar Lake-Sammamish Watershed, to help on salmon recovery efforts in that area.

Preliminary Results from the Questionnaire and the Home Elevation Survey

Toni reviewed the preliminary results from the questionnaire and the home elevation survey mailed to residents in the Stillaguamish River basin at the end of 2000. The questionnaire was mailed to residents in the entire basin to advise of the Comprehensive Flood Hazard Management Plan and to gather public input on potential solutions, existing hazard areas, and flood issues. The home elevation survey was conducted as part of the Corps of Engineers' Section 205 Small Flood Study (study area is the floodplain west of I5 to the sound and north to the Skagit). This survey was conducted to determine the level of interest residents in the Section 205 study area had in a home elevation program should the Corps offer it.

From the **questionnaire** (8,000 mailers, 236 responses, which was approximately 3% response), Toni reviewed the results from the total responses.

- 27% of all respondents said they had been flooded;
- 24% of all respondents suggested regulatory controls as a possible solution to eliminate or reduce river-flooding damage;
- 19% of all respondents suggested homes flood proofed;
- 47% of all respondents suggested bank protection;

- 29% of all respondents suggested in-stream controls;
- 13% suggested acquisition;
- 47% suggested constructing more dikes and levees;
- 11% suggested dredging; and,
- 5% stated that logging/clear cutting should either be stopped or reduced.

The home elevation survey was mailed to individuals who resided in the Section 205 study area. This survey was an effort to determine the interest level in participating in a home elevation program the Corps may offer through the Section 205 (residents would be required to pay 35% of the cost of elevating their homes) from that specific community. For the **home elevation survey**, (1,500 mailers, 90 responses, which was approximately 6% response), approximately 60% were interested in the program. Of those interested, 42% had been flooded.

Additional tabulated results are attached.

Stillaguamish River Background Report

The committee was then asked to provide input on the background report. Overall, the committee felt that the report's framework was good and appreciated the opportunity to review and comment on the information. They also believed that having the flood history of the basin in one document was an important part of the report. Following is a list of edits:

- Granite Falls is included in the list of participants in the National Flood Insurance Program and they are not.
- The section containing information on the geology of the basin should include the documentation of Glacier Peak as historically draining into the Stillaguamish River basin. In addition, it should be noted in the document that Glacier Peak now drains to the Skagit River basin. In the unlikely event that a catastrophic incident occur, the impacts could potentially be seen in the lower Stillaguamish River basin.
- The graph on page one may lead readers to assume that flows on the mainstem have continued to increase at the same rate as the trend indicates for the North Fork Stillaguamish River. This is not the case. Vaughn explained that the only long-term gage available is on the north fork, and although mainstem mean daily flows have been estimated, no peak flow data is available for the mainstem. The text associated with the graph will be changed to more accurately reflect this information.
- In the stormwater portion of the report, it should be noted that the drainage maps are very outdated. Vaughn advised that the maps are currently being updated primarily for the urban growth areas in the county. If, however, tide gates or other floodplain drainage structures are found to be incorrect in the flood plan study area, that information will be included in the final report.

- Duane stated that future conditions should include an assessment of the watershed with the forest practices improvements incorporated. Improvements in harvest practices, road location, construction, and maintenance (or decommissioning) and other practices that alter the river system should increase the overall health of the system with time. Toni advised the committee that the flood plan would assess existing and future conditions and the updated forest practices will be included as part of that assessment.
- Dave advised that FEMA and Ecology are doing a Section 7 consultation (Endangered Species Act) with the National Marine Fisheries Services to develop an acceptable state regulatory framework for floodplain management in connection with the ESA. The first meeting is scheduled for the end of February and a draft of the new regulations is expected in six months. Dave suggested this work be considered when developing the regulatory issue paper so it best reflects at least the minimum state regulations that may be proposed as a result of this consultation.
- The committee also discussed the FEMA flood damage costs documented in the report. The majority of the federal damages actually occurred in the south Snohomish County in the Snohomish River watershed. The committee requested the county investigate the possibility of breaking out the Stillaguamish River basin to more accurately reflect actual dollars lost in the study area. Toni advised that initial communications indicated that wasn't possible, but she would look at other avenues to retrieve Stillaguamish basin damage amounts.

The committee also asked that repetitive loss information the county currently has on record be included in the report. Chuck advised that in the FCD alone estimated damages totaling at least \$3.5 million as a result of the 1990 floods. Bobbi stated that the procedure used by FEMA to determine damages may not be the best for obtaining the accurate damage amounts.

- In the 1995 flood, Max noted that a house was lost to the river and this information was not documented in the report. In addition, approximately 200 feet of the levee upstream of the wastewater treatment lagoons on the right bank of the Old Stillaguamish River breached and had to be repaired. Three breaches occurred on Church Creek levees and five breaches occurred along the Old Stillaguamish River.
- A section will be added to document the path taken by floodwaters during floods.
- Larson Dam's description needs to be edited to reflect its original design was to act as a plug to prevent floodwater from entering Irvine Slough.
- Hat Slough spelling will be changed to Hatt Slough.
- Chuck Hazleton, Stillaguamish Flood Control District, suggested several other edits throughout the document.

- Bill Blake, City of Arlington, provided a copy of his report with edits in addition to marked-up copies of Thomas Guide maps indicating various locations of flooding.
- Anna Campbell, U.S. Corps of Engineers, provided comments via email.
- Chris Toms, Washington Department of Natural Resources, provided comments via email.

Section 205 Small Flood Study Results

A copy of the modeling results was distributed to the committee. All three alternatives that were modeled included widening Irvine Slough, removing Larson Dam, elevating the bridge, and constructing a bypass around the pump plant. In addition, each model contained an 80-foot sand plug located either on top of or adjacent to the existing seven culverts at the southeast corner of the sewer lagoons. Two of the alternatives involved constructing an additional levee adjacent to the existing cross levee on the Florence Island peninsula. This bypass or shortcut created was modeled at a width of 100-feet and 400-feet and will allow floodwater a shorter pathway from the Old Stillaguamish River to South Pass and Port Susan.

Although benefits were observed in all of the alternatives modeled, results indicated that the combination of the Irvine Slough improvements and the 400-foot bypass through Florence Island result in the greatest reduction of water surface elevations throughout several Old Stillaguamish River areas. For example, in a 10-year flood event, the Park and Ride area elevations were reduced by almost 2.2 feet, the Matterand's lobe water levels were reduced by 1.4 feet, and in the river channel level near the seven culverts, reductions were almost 2 feet. In 100-year flood event, the reductions are less, but were still significant. In the Park and Ride area, the reductions achieved were 1.2 feet and in the channel of the Old Stillaguamish River the water levels were reduced by almost one foot. Tabulated data were also provided for the 2-, 5-, 25-, and 50-year hypothetical flood events (see attached table).

These results were provided to the Corps of Engineers at the end of January so they can complete the preliminary designs, cost estimates, and benefit analysis for each option. The Corps expects to have this information available for review by the end of February. A meeting will be scheduled with the Section 205 study team at that time to review the alternatives, the results of the modeling, cost estimates, and the benefit:cost ratio. This information will be provided to the advisory committee as well.

Review of Hazard Areas

The committee then reviewed the draft list of the hazard areas identified in the September 2000 meeting. In general the committee thought the list to be complete with the addition of Black Creek on the South Fork Stillaguamish River. This creek contains a 60-foot splash dam that, if breached, may create a debris flow concern.

The committee also briefly discussed the bank stabilization program and the permitting limits landowners currently face. Currently the resident is responsible for obtaining the appropriate permits and completing the tasks associated with that effort. The county has not historically

been involved in permitting portion of the bank stabilization effort, however, because of salmon recovery efforts, permitting is becoming increasingly challenging and complex for everyone. The county is currently reviewing this program to determine what level of county involvement is appropriate to assist landowners with the permitting requirements.

Draft Goals, Objectives, and Project Evaluation Criteria

A copy of the state's flood hazard reduction goals, a list of objectives from the January 1993 King County Flood Hazard Reduction Plan Executive Proposal, and a copy of the project evaluation criteria from the Skykomish Comprehensive Flood Hazard Reduction Plan were distributed to the committee.

Dave Burdick commented that it was important to provide the Stillaguamish River basin residents an opportunity to review and comment on the goals and objectives of the project. He was also concerned that the goal and objective review process was a "top-down" approach as opposed to a "bottom-up approach." Toni advised the committee that reviews with the Clean Water District, the Stillaguamish Implementation Review Committee, and a quarterly mailing to residents on the mailing list was planned to ensure that proper input was received from the community. In addition, committee members advised that they are active in the community and that they have shared information with their respective groups on an on-going basis. It was felt that this level of effort to provide the community an opportunity to provide feedback would be sufficient.

The committee was asked to forward their comments on the goals, objectives, project evaluation criteria to Toni by Friday, February 9, 2001. In addition, the committee was asked to provide feedback on how they thought it best to prioritize projects that are developed in this project.

Next Meeting

The next meeting will be held Tuesday, April 24, 2001, from 2:00 p.m. to 4:00 p.m. at the Boys and Girls Club at 18513 59th Avenue NE in Arlington. The tentative agenda for this meeting includes a review of the goals, objectives, and project evaluation and problem prioritization criteria. In addition, the issue papers (i.e., forest practices, storm water, and regulatory) will be distributed to the committee in early April so they can be discussed at the meeting. Updates on progress on hazard areas are also planned for the April meeting.

2001 Schedule

The schedule for the remainder of the year was also discussed. The next meetings are scheduled for Tuesday, July 24 and Tuesday, October 23, 2001. All meetings are scheduled at the Boys and Girls Club from 2:00 p.m. to 4:00p.m. in Arlington.

The meeting adjourned at 4:00p.m.

Preliminary Results

From the

Comprehensive Flood Hazard Management Plan Questionnaire

And the

Section 205 Small Flood Study Home Elevation Survey.

(1/30/01)

CFHMP Questionnaire
(approx. 8,000 mailings)

<u>All responses</u>	<i>All residents</i>	%	<i>Resident less than 1yr</i>	%	<i>Resident 1 to 5yr</i>	%	<i>Resident more than 5 years</i>	%	<i>Total flooded</i>	%	<i>Total not flooded</i>	%
Total Responses (3% response)	236		17		48		171		64		121	
Experienced river flooding?	64	27	0	0	8	17	56	33	na	na	na	na
Regulatory controls?	57	24	4	24	12	25	41	24	12	19	33	27
Floodproof homes?	46	19	1	6	9	19	36	21	16	25	20	17
Bank protection?	111	47	3	18	26	54	82	48	36	56	54	45
Use in-stream controls?	68	29	1	6	16	33	51	30	23	36	31	26
Acquisition?	31	13	1	6	7	15	23	13	6	9	14	12
Construct dikes or levees?	47	20	0	0	12	25	35	20	23	36	19	16
Dredge river?	25	11	1	6	4	8	18	11	13	20	8	7
Stop or reduce logging?	12	5	2	12	0	0	11	6	6	9	3	2

Home Elevation Survey
(approx. 1,500 mailings)

Total Responses (6% response)	90	%
Interested in Program?	53	59
Flooded in 1990?	28	31
Flooded any other time?	22	24

Section 205 Small Flood Study Baseline and Alternative WSEL.

Dated January 30, 2001

1. Runs completed in January 2001
2. Irvine SI has a 130 foot top width and 50 foot bottom width; slope 2H:1V from elevation 12 (top of levee) to -8 (channel bottom)
3. The pump plant was not included in these runs to simulate a bypass around it.
4. The type of control structure needed to prevent tidal waters from entering back into the slough has not been determined yet (cost, location).
5. Control structure will prevent tidal activity so WSELs with high "tidal fluctuations" were disregarded in the 2-year flood (for all other floods, tide levels were < flood waters).
6. For 2-year alternatives assumed that the PNR and IS were same WSEL because Larson Dam will be removed, therefore water getting into PNR will get into IS.
7. The bridge opening was modeled at 50 feet maximum width (rectangular in shape) and bridge was elevated 7 feet.

Location	2-year Flood							5-year Flood							10-year Flood						
	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta
Park and Ride	6.66	6.66	6.66	6.66	0	6.66	0	11.37	9.47	-1.9	9.27	-2.1	9.11	-2.26	11.96	10.29	-1.67	10.1	-1.86	9.81	-2.15
Matterand Road (5.5ft)	5.5	dry	0	dry	0	dry	0	10.95	5.83	-5.12	6.08	-4.87	6.22	-4.73	11.51	10.27	-1.24	10.09	-1.42	10.08	-1.43
Florence Island (1ft)	2.29	2.12	-0.17	2.03	-0.26	1.95	-0.34	10.75	5.83	-4.92	6.08	-4.67	6.22	-4.53	11.17	10.33	-0.84	10.2	-0.97	10.23	-0.94
Lagoon (6ft)	6	dry	0	dry	0	dry	0	7.76	dry	-1.76	dry	-1.76	dry	-1.76	10.34	dry	-4.34	dry	-4.34	dry	-4.34
Loop (4.5ft)	4.5	dry	0	dry	0	dry	0	4.5	dry	0	dry	0	dry	0	4.5	dry	0	dry	0	dry	0
Old Stilly																					
RM2.08 (7culverts)	8.79	8.74	-0.05	8.71	-0.08	8.66	-0.13	10.88	9.32	-1.56	9.16	-1.72	9.04	-1.84	11.5	10.11	-1.39	9.81	-1.69	9.57	-1.93
RM0.60 (bypass)	8.11	8.08	-0.03	8.08	-0.03	8.07	-0.04	8.73	8.55	-0.18	8.38	-0.35	8.2	-0.53	9.14	8.95	-0.19	8.62	-0.52	8.35	-0.79
RM0.04 (Irvine Exit)	8.04	8.04	0	8.04	0	8.04	0	8.16	8.32	0.16	8.23	0.07	8.14	-0.02	8.23	8.65	0.42	8.47	0.24	8.3	0.07
RM -0.38 (Bifurcation)	8.04	8.03	-0.01	8.03	-0.01	8.03	-0.01	8.05	8.05	0	8.04	-0.01	8.05	0	8.06	8.06	0	8.06	0	8.06	0
Irvine SI (RM4.1 U/S of Bridge)	6.66	6.66	0	6.66	0	6.66	0	6.87	8.54	1.67	8.46	1.59	8.38	1.51	10.28	9.07	-1.21	8.87	-1.41	8.69	-1.59
Location	25-year Flood							50-year Flood							100-year Flood						
	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta	Base	Alt 1	Delta	Alt 2	Delta	Alt 3	Delta
Park and Ride	12.21	11.03	-1.18	10.89	-1.32	10.7	-1.51	12.46	11.58	-0.88	11.36	-1.1	10.65	-1.81	12.64	11.9	-0.74	11.61	-1.03	11.44	-1.2
Matterand Road (5.5ft)	11.71	10.98	-0.73	10.86	-0.85	10.73	-0.98	11.93	11.39	-0.54	11.25	-0.68	10.88	-1.05	12.12	11.62	-0.5	11.43	-0.69	11.33	-0.79
Florence Island (1ft)	11.35	10.89	-0.46	10.85	-0.5	10.81	-0.54	11.58	11.2	-0.38	11.12	-0.46	11.09	-0.49	11.79	11.4	-0.39	11.3	-0.49	11.26	-0.53
Lagoon (6ft)	10.84	9.42	-1.42	7.26	-3.58	6.11	-4.73	11.24	10.54	-0.7	9.88	-1.36	6.37	-4.87	11.46	10.95	-0.51	10.28	-1.18	9.7	-1.76
Loop (4.5ft)	4.5	dry	0	dry	0	dry	0	8.04	4.68	-3.36	dry	-3.54	dry	-3.54	9.47	9.32	-0.15	dry	-4.97	dry	-4.97
Old Stilly																					
RM2.08 (7culverts)	11.74	10.83	-0.91	10.69	-1.05	10.5	-1.24	12.06	11.36	-0.7	11.16	-0.9	10.53	-1.53	12.25	11.67	-0.58	11.39	-0.86	11.35	-0.9
RM0.60 (bypass)	10.03	9.24	-0.79	8.85	-1.18	8.47	-1.56	11.05	10.29	-0.76	9.31	-1.74	8.55	-2.5	11.35	10.84	-0.51	9.66	-1.69	9	-2.35
RM0.04 (Irvine Exit)	9.22	8.91	-0.31	8.68	-0.54	8.43	-0.79	10.52	10	-0.52	9.09	-1.43	8.43	-2.09	10.75	10.58	-0.17	9.47	-1.28	8.94	-1.81
RM -0.38 (Bifurcation)	8.06	8.06	0	8.06	0	8.06	0	8.22	8.06	-0.16	8.08	-0.14	8.07	-0.15	8.26	8.09	-0.17	8.13	-0.13	8.15	-0.11
Irvine SI (RM4.1 U/S of Bridge)	10.78	9.45	-1.33	9.23	-1.55	8.94	-1.84	11.18	10.55	-0.63	9.89	-1.29	8.8	-2.38	11.4	11.04	-0.36	10.27	-1.13	9.9	-1.5

Alt 1: Irvine Slough Improvements with a sand plug at the southeast corner of the WWTP (Irvine Slough improvements include channel widening, elevating the bridge, removing Larson Dam, and constructing a bypass around the existing pump plant).

Alt 2: Alt 1 and a 100-foot bypass through Florence Island Peninsula.

Alt 3: Alt 1 and a 400-foot bypass through Florence Island Peninsula.