Flood Insurance Mapping Study
for the
Snoqualmie River
(*Skykomish River confluence to Snoqualmie Falls*)
and
Skykomish River
(Snoqualmie River confluence to RM 8.95)

King and Snohomish Counties, WA

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1.0 INTRODUCTION

1.1 Purpose of Project

The purpose of this project is to prepare a flood study of the lower Snoqualmie and lower Skykomish Rivers that can be submitted to FEMA to initiate a revision to the published Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies (FISs) for Unincorporated King and Snohomish Counties in the State of Washington. The revised floodplain and floodway maps will reflect the current hydraulic and hydrologic conditions of the rivers and will replace the effective maps which were prepared prior to the 1980s.

1.2 Coordination

This study was completed for FEMA at the request of King and Snohomish Counties. The Counties served as Cooperating Technical Partners (CTP), providing relevant study data, first-hand information on the watersheds and associated flooding issues, and technical review of all study products. King County also served in the role of Project Manager and contracted with Northwest Hydraulic Consultants, Inc, (**nhc**) to provide technical analyses for the FIS updates. A study kickoff meeting was held March 18, 2004 and was attended by representatives of King County, Snohomish County, and **nhc**.

The government agencies and consulting firms contacted for information relevant to this study include:

Agency / Consulting Firm	Information Provided
U.S. Geological Survey	gaged flow data throughout the Snohomish River watershed (including the Snoqualmie and Skykomish River basins)
U.S. Army Corps of Engineers, Seattle District	high water mark surveys, previous hydrologic reports within the Snohomish River watershed
King County	background information, high water mark surveys, aerial photos of historic flooding, GIS shapefiles and LIDAR data
Snohomish County	background information, high water mark surveys, aerial photos of historic flooding, GIS shapefiles and LIDAR data
Trout Unlimited (and R2 Resource Consultants)	hydraulic model of Cherry Valley
West Consultants	information from 2001 Snohomish River FIS Update

2.0 AREA STUDIED

2.1 Scope of Study

This floodplain mapping study comprises an investigation of riverine flooding on the Snoqualmie and Skykomish Rivers in both King and Snohomish Counties. The study reach includes the lower 39 miles of the Snoqualmie River and the lower 9 miles of the Skykomish River. The study was performed using detailed hydrologic and hydraulic analysis methods approved by FEMA. No portion of the study area was analyzed using approximate methods.

2.2 Study Reach Description

The model study reach is located in King and Snohomish Counties, including areas near the cities of Monroe, Duvall, Carnation and Snoqualmie (Figure 1). The downstream mapping limit of the study is the State Route 522 Bridge crossing over the Snohomish River, approximately 1 river mile downstream of the confluence of the Snoqualmie and Skykomish Rivers. The upstream mapping limit on the Snoqualmie River is at the base of Snoqualmie Falls just downstream of the City of Snoqualmie, approximately 39 river miles upstream of the confluence with the Skykomish River. On the Skykomish River, the upstream mapping limit is approximately 9 river miles upstream of the confluence with the Snoqualmie River at a location between the cities of Monroe and Sultan, in Snohomish County, Washington.

The Snoqualmie and Skykomish Rivers drain adjacent watersheds of similar size and mean annual discharge. Headwaters of both rivers are at the crest of the Cascade Mountains, and land cover in both watersheds is dominated by coniferous forest cover. The primary distinction between the two rivers is that the Snoqualmie River below Snoqualmie Falls occupies a relatively broad, alluvial valley and has a much lower gradient than the mainstem Skykomish River, which is generally steeper and more confined. The hydrologic response, therefore, on the Snoqualmie River is generally more delayed and flows are often attenuated relative to the Skykomish River which is flashier with typically higher peak discharges.

2.3 Principal Flood Problems

2.3.1 Skykomish River

Flood problems in the lower Skykomish River are concentrated in the Tualco Valley area south of Monroe. The highest concentrations of development in the City of Monroe are generally on high ground above flood levels. Skykomish floodwaters do, however, back up Woods Creek and also inundate the Cadman gravel pit, both within the Monroe city limits.

The principal infrastructure affected by flooding includes SR-203, which stretches south from Monroe across the Skykomish River and through the lowermost portion of the Snoqualmie Valley, and the Burlington Northern - Santa Fe (BNSF) railroad, which parallels the river and is near the main channel at several points where it must be protected from bank erosion. Haskell Slough, a major floodplain overflow path, is blocked at its head by the Haskell Slough dike, a Snohomish County maintained structure. This dike, and the lands adjacent, has sustained significant damages in past floods and the river has exhibited behaviors indicating a possibility of avulsion though the slough.

In the lower end of the Tualco Valley, the flows of the Snoqualmie and Skykomish Rivers merge. Flood flows here are slower, but depths of flooding are greater and durations are longer. Throughout the lower Skykomish Valley localized bank erosion is common, putting structures near the channel at risk.

2.3.2 Snoqualmie River

The Snoqualmie Valley is a wide, low gradient floodplain mostly comprised of agricultural lands with a few relatively small residential communities. Flooding is most commonly associated with inundation of farm houses and barns, and the valley roads that parallel or cross the mainstem Snoqualmie River. Damage is often due to large areas of inundation along with localized erosion of outer river banks and revetments, overtopping of flood protection levees, and road embankments.

Although the mainstem Snoqualmie is characterized by relatively low velocities and a mild gradient, flooding can cause substantial localized erosion. Problems generally relate to constrictions, where flow energies become concentrated. The Carnation Farm Road is such an example; the road fill embankment forces flood waters through two small bridge openings. Both bridge approaches were washed out during the Thanksgiving 1990 flood event when flood flows exceeded their capacity. Existing King County flood control facilities (levees and revetments) in this basin sustained damages of just over one million dollars in the Thanksgiving 1990 flood.

In addition to this erosion damage, the deep, broad flooding of the Snoqualmie River valley brings other damages. The Thanksgiving 1990 flood killed hundreds of cows on the lower valley's dairy farms. Rising flood waters damaged homes near Carnation and scattered locations elsewhere throughout the valley. In two separate incidents (January 1990 and November 1990), motorists drowned when they attempted to drive across flooded valley roads.

2.4 Flood Protection Measures

There are no FEMA certified levees on either the Snoqualmie or Skykomish Rivers. There are dams on two tributaries (Tolt River, Sultan River); however, these dams do not have significant dedicated flood control storage and do not provide significant flood flow reduction on the Snoqualmie or Skykomish.

3.0 ENGINEERING METHODS

Flood hazards along the Snoqualmie and Skykomish Rivers were studied using engineering methods approved by FEMA. Descriptions of these methods are contained in the sections to follow. The specific hydrologic and hydraulic analysis approach used in this study was the subject of a detailed review by FEMA. Attached as Appendix A is a copy of the Hydrologic and Hydraulic Technical Memorandum developed by **nhc** to describe the modeling approach. The approach was approved by FEMA in an e-mail dated July 29, 2004.

3.1 Hydrologic Analysis

The objective of the hydrologic analysis in this study was to develop 10-, 50-, 100-, and 500- year (*i.e.* "N"-year) design flood hydrographs for input to the HEC-RAS unsteady hydraulic model at all model inflow points. Design flood hydrographs were developed for eleven inflow locations along the Snoqualmie River portion of the study area and seven locations along the Skykomish River portion. Inflow points include the upstream boundaries of each river, major tributaries, and areas contributing significant direct discharge to the rivers (see Figure 2 in Appendix A for locations).

Design event inflow hydrographs were developed using a process that included model calibration, application of the model to simulate a wide range of historic flood events, stage frequency analysis on the resultant historic flood stages at key locations, and then refinement of the N-year design event hydrologic inputs to achieve reasonable concurrence with the corresponding N-year stages at the key locations.

Inflow hydrographs from sixteen of the largest flood events that occurred between water years 1966 and 2003 were synthesized for input to the hydraulic model. The primary source of these flow data were USGS observed flow records. Where USGS data was not available, a range of methods were utilized to estimate historical flood hydrographs at the hydraulic model inflow points including gage data transposition, rainfall-runoff modeling, and reservoir operations modeling. The methods used to develop the data for each event at each input point are summarized in Table 1.

Each of the sixteen historic floods was then simulated using the HEC-RAS unsteady hydraulic model described in Section 3.2. For water years in which two significant flood events occurred, both were simulated and the highest stage at each key location was retained. The resultant peak stages were then plotted on frequency paper and stage frequency curves were drawn through the data. Section 3.2.3 and Appendix A explain in further detail how the historical inflow data and hydraulic model were used to estimate stage frequency curves.

Of all of the floods simulated with the hydraulic model, two were found to produce stages that most closely corresponded to certain N-year stages at key locations throughout the study area. Peak stages produced by the December 1977 flood simulations most closely approximated 10-year stages in the study area while the November 1990 flood simulations resulted in river stages that most closely matched 50- and 100-year conditions. November 1990 is also the largest flood within the USGS's systematic gage record, and best suited for developing 500-year design hydrographs. Consequently, historical inflow hydrographs for these two historic floods with relatively small adjustments were used to produce the N-year design input hydrographs for floodplain mapping, floodway analysis, and discharge quantile estimation. The hydraulic analysis and floodplain

mapping is described in detail in Section 3.2. The resultant discharge quantiles are summarized in Table 2. These data represent the peak flows simulated in the hydraulic model at the listed locations using the corresponding design event model. The listed locations were included in Table 2 because the USGS operates a stream gage at each of the sites, allowing for easy comparison with the often reported discharges. It should be noted that during large flood events, water escapes the main channel at the Carnation and Duvall gages. Therefore, discharge quantiles at these sites is further divided into discharge remaining in the main channel and that passing by the gage in the overbank.

3.2 Hydraulic Analysis

An HEC-RAS unsteady flow hydraulic model was created to simulate the hydraulic characteristics of the 49-mile study reach. The model was used to compute water surface profiles corresponding to the 10-, 50-, 100-, and 500- year floods, floodplain inundation limits for the 100- and 500-year events, and floodway boundaries for the 100-year flood.

The following sections provide detailed descriptions of the development and application of the HEC-RAS model for this study.

3.2.1 Channel and Floodplain Topography

One hundred ninety-seven surveyed channel cross-sections were used in the HEC-RAS model to represent conditions on the mainstem Snoqualmie, Skykomish, and Snohomish Rivers. Including overflow reach and interpolated cross-sections, the total number of cross-sections in the model was 482. The average surveyed cross-section spacing was approximately 1,200 feet. All of the mainstem cross-sections were surveyed in March 2004 by Minister-Glaeser Surveying using bathymetric techniques. The surveyed transects included only the wetted river channel from the water's edge, bank to bank. Topographic data for the overbank portions of each cross-section was derived from digital topographic data developed by 3Di-West. The topographic data was created using a combination of photogrammetric techniques and LiDAR data. Aerial photographs of the study reach were taken in March 2004. Table 3 identifies the information source for each cross-section and the date the data was generated.

3.2.2 Hydraulic Structures

Eight bridges have potential to significantly impact hydraulic conditions within the study reach. These include the following six bridges on the Snoqualmie River: SR-202 Bridge at Fall City, Tolt Hill Road Bridge over the Snoqualmie River, NE Carnation Farm Road Bridge (Stossel Fill), Novelty Bridge (NE 124th Street), Woodinville-Duvall Road Bridge, and High Bridge (Crescent Lake Road) and the following 2 bridges on the Skykomish River: SR-203 Bridge at Monroe (12th Street Bridge) and the old BNSF Railroad Bridge, located 3,600 feet upstream of the 12th Street Bridge. Bridge dimensions were obtained from as-built drawings and were supplemented with field survey by **nhc** as necessary.

3.2.3 General Modeling Approach

The general approach applied in this study was to characterize the probability of flooding based on an evaluation of annual peak stages rather than annual peak flows. Because of numerous complicating factors including dynamic interaction at the confluence of the Snoqualmie and

Skykomish Rivers (including flow reversals), significant differences in floodplain storage in the two study reaches, and historically observed variations in the concurrence of high flows on the two rivers, the only reliable approach to estimate flood inundation frequency was to apply an unsteady flow hydraulic model (HEC-RAS) to estimate 10-, 50-, 100-, and 500-year (N-year) flood profiles throughout the study reach. The following steps were executed to develop the N-year, unsteady hydraulic models:

1. Reviewed USGS gage records in the Snohomish River basin and selected 16 large historic flood events to model.
2. Developed inflow hydrographs to the unsteady HEC-RAS model for the historic events. These hydrographs utilized available 15-minute and/or hourly USGS flow data, correlation coefficients, rainfall-runoff modeling, and information about reservoir operations on the Tolt and Sultan Rivers.
3. Performed hydraulic modeling of the selected flood events, including calibration/verification to seven of these historic events (see Section 3.2.4), and extracted peak stages at 20 key locations throughout the study reach.
4. Estimated plotting positions associated with the 16 selected flood events.
5. Manually fit non-parametric frequency curves to the peak stages obtained from step 3 using plotting positions from step 4.
6. Used the curves developed in step 5 to provide estimates of the 10-, 50-, 100-, and 500-year stages at each key location.
7. Developed the N-year HEC-RAS models. Used a trial-and-error method to adjust historic flood inflows so that the peak stage at all key locations match the N-year stage developed in step 6.
8. Applied N-year unsteady HEC-RAS models to estimate the 10-, 50-, 100-, and 500-year profiles throughout the study reach.

These steps are elaborated more fully in a memorandum titled Proposed Approach to Hydrologic and Hydraulic Analysis of the Lower Snoqualmie and Lower Skykomish Rivers, included as Appendix A.

3.2.4 Model Calibration

Channel and overbank roughness factors (Manning's "n" values) used in the hydraulic computations were chosen using engineering judgment and were based on field observations, orthophotos, and published data. Within the study reach, in-channel roughness values on the Skykomish River range from 0.03 to 0.05 and on the Snoqualmie River from 0.03 to 0.055. Overbank roughness values for both rivers range from 0.02 to 0.15.

The hydraulic model was calibrated and verified to high water marks (HWMs) and/or aerial photography from seven recorded events. The Seattle District COE provided HWMs for the following flood events: January 5, 1969; December 3, 1975; December 26, 1980; and November 23, 1986. King and Snohomish Counties and several long time valley residents provided HWMs for the November 24, 1990 storm. King County also provided oblique aerial photos of the storms on November 24, 1990, November 29, 1995, and February 9, 1996.

A significant effort was made to match each of the high water marks through refinement of the model parameters and structure. Calibration efforts included changes to the delineations of overflow reaches, adjustment of roughness and contraction and expansion coefficients, and modifications to model inputs that govern breakout flows. In some cases, the model simulated water surfaces that were higher than reported HWMs for one event while in other events the simulations yielded lower than reported peak water surface elevations. Where conflicting information was found, an effort was made to split the difference, giving more weight to the recent and larger flood events. The final calibration/verification is felt to be adequate given the complexities of the system and the limitations of a one-dimensional hydraulic model.

3.2.5 Transition to Adjacent Studies

The downstream limit of this Snoqualmie and Skykomish hydraulic model was the SR-522 Bridge crossing over the Snohomish River. FEMA recently reviewed and approved a flood study by the US Army Corps of Engineers of the Snohomish River from Possession Sound to the SR-522 Bridge. The simulated water surface at the bridge for the Snohomish River study was 44.19 ft (NAVD 88) and for this Snoqualmie and Skykomish River study is 42.95 feet, a difference of 1.24 feet. The estimated 100-year discharge at the SR-522 Bridge used in the Snohomish River study was 204,000 cfs. The resultant 100-year discharge at the bridge from the Snoqualmie and Skykomish River model was 197,000 cfs.

The Snohomish River transition was discussed in detail with representatives from King County, Snohomish County, FEMA Region X and FEMA's technical review contractor at the Regional Management Center 10 (RMC10). Based on those discussions, adjustments were made to the hydrologic data for the design events on the Skykomish River to reflect historic flood data from the early 1900's as reported by the USGS. Those adjustments also brought the design event flows at the downstream boundary closer to those previously estimated by the US Army Corps of Engineers. With the adjustments to the Skykomish River hydrology, the downstream study transition was much more closely matched, and was accepted by FEMA and the RMC10. Furthermore, since the transition reach on the Snohomish River is characterized by a narrow and relatively steep channel, the floodplain and floodway delineations at this location blend appropriately.

The upstream study limit on the Skykomish River occurs at RM 8.95. The effective floodplain and floodway at this location are very similar in width to the revised mapping generated by this study. Blending of the floodplain and floodway boundaries here also are very closely matched.

The upstream study limit on the Snoqualmie River is at the base of Snoqualmie Falls, resulting in no issue with mapping the transition to the effective study upstream of that boundary.

3.2.6 Floodplain Discussion

In general, the estimated 100-year floodplain limits within the Snoqualmie Valley extend from the west valley wall to the east valley wall. There are two exceptions to this generalization. The first occurs in the reach between Snoqualmie Falls and Fall City, where the Snoqualmie River channel slope is its steepest and the mapped floodplain does not extend all the way to the east valley wall. The second exception is in the vicinity of Carnation, where the Tolt River alluvial fan has raised the valley topography and Snoqualmie River flood waters do not reach the east valley wall. The flattest portion of the flood profile on the lower Snoqualmie River occurs between the High Bridge (Crescent Lake Road) and the Woodinville-Duvall Road Bridge. The 100-year water surface rises less than 2 feet across this span of 7 river miles.

The channel slope of the lower Skykomish River is significantly steeper though the floodplain is not significantly more confined than the lower Snoqualmie. For comparison, the lower 7 miles of the Skykomish River drops 33 feet, compared to the 2 foot drop on the lower 7 miles of the Snoqualmie River. In general, however, the 100-year floodplain of the Skykomish River still extends from the south valley wall to either the north valley wall or State Highway 2.

3.2.7 Flood Profiles

The flood profiles for the study reach are shown on Exhibit 1 through Exhibit 11. The profile panels illustrate the 10-, 50-, 100-, and 500-year water surface elevations for the Snoqualmie, Skykomish, and Snohomish Rivers and all modeled overflow reaches.

3.3 Vertical Datum

All flood insurance studies are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised studies was the National Geodetic Vertical Datum of 1929 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), most studies are being prepared using NAVD 88 as the referenced vertical datum. The hydraulic analysis for the Snoqualmie and Skykomish Rivers was conducted using the NAVD 88 vertical datum. Elevation conversion factors between the two vertical datums vary by location and can be obtained from the National Geodetic Survey's VERTCON utility (NGS, 1994). In general, elevations in the Snoqualmie Valley can be converted from NGVD 29 to NAVD 88 elevations by adding 3.49 ft.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

4.1 Floodplain Boundaries

As noted previously, the floodplain boundaries for the 100- and 500-year events are shown in Exhibit 12 at a scale of 1 inch equals 500 feet. The base map and all FIS features have also been provided in digital form on the compact disk in the sleeve at the back of this report (AutoCAD version 2004 format).

Users should be aware that flood elevations shown on the work map represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Tables. Flood elevations shown on the work map are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in the Floodway Data Tables as well as the Flood Profiles in conjunction with the data illustrated on the work map.

4.2 Floodway

A Regulatory Floodway was delineated for the Lower Snoqualmie and Skykomish Rivers using the unsteady HEC-RAS model and following the FEMA Guidelines and Specifications for Flood Hazard Mapping Partners. The hydraulic model for the baseline floodplain included eight distinct secondary flow branches in addition to the main channel reaches on the Snoqualmie and Skykomish Rivers. These secondary flow branches were added to improve the model's simulation of complex floodplain hydraulic conditions including breakout flows, topographic divides, overflow channels, and storage areas. For the floodway analysis, the baseline model was modified to reflect floodplain encroachments as could be made while maintaining a flow corridor that could pass the 0.01 chance exceedence event without exceeding a 1.0 foot surcharge at any point in the main channel. The process of developing the floodway model comprised the following steps:

1. Begin with the 0.01 percent chance exceedence event (base flood) floodplain model.
2. Transfer the floodway limits from the effective FIS to the new hydraulic model.
3. Evaluate the surcharge of the effective floodway encroachments on water surface elevations in the new model. Like the base flood model, the floodway model is run using unsteady HEC-RAS. Thus the surcharge reflects both a loss of conveyance capacity and a reduction in flood storage.
4. Make adjustments to the effective floodplain encroachments to the extent necessary to pass the base flood without exceeding a 1.0 foot surcharge at any point in the main channel. To the extent possible, encroachment adjustments were made to provide an equal conveyance reduction on the left and right overbanks.
5. The modeled floodway encroachments at each cross section were plotted on the project work maps and floodway encroachments were adjusted to provide a smooth transitioning floodway delineation and to account for any areas of high ground between model cross sections.
6. The adjusted floodway encroachments from Step 5 were then reinserted in the HEC-RAS model and final floodway simulations were conducted to ensure that the surcharge criteria for the main channel were achieved.

As noted, the floodway analysis conducted by **nhc** focused on achieving a one foot surcharge in the main channel. It should be noted that there are areas where the newly estimated Base Flood Elevations (BFEs) in the overbank are not at the same level as the newly estimated main channel BFEs on the adjacent reach. This is because discharge to overflow reaches is affected by hydraulic controls in the floodplain, such as roads or high ground. Comparing the base flood elevations for the main channel with the BFEs in the adjacent overflow reaches shows that elevation differences of greater than one foot occur in several locations, including along Riley Slough, the overflow branch north of Carnation, and the overflow branch east of Fall City. In these locations, and throughout the study area, the analysis focused on maintaining floodway surcharges in the main channel within the allowable one foot limit.

The extents of the floodway were extracted from the final floodway model at each modeled cross-section. Between sections, the floodway boundary was interpolated based on topographic information and to reflect general hydraulic principles. The results of the floodway analysis are tabulated for each cross-section in Tables 4, 5, and 6. The floodway boundary is also shown on the work map.

5.0 BIBLIOGRAPHY AND REFERENCES

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HEC (Hydrologic Engineering Center). (2005). *HEC-RAS, Version 3.1.3* [Computer Program]. Davis, CA

NGS (National Geodetic Survey). (1994). *VERTCON, Version 2.0.* [Internet Website, available at: http://www.ngs.noaa.gov/TOOLS/Vertcon/vertcon.html].

Table 1: Unsteady HEC-RAS Model Inflow Data Sources for Selected Historical Events

Node ID	Node Description	Area (sq mi)	USGS River Mile	12/25/67	1/5/69	2/28/72	1/18/75	12/3/75	12/2/77	12/26/80	12/3/82	1/25/84	11/23/86	1/10/90	11/24/90	2/19/95	11/29/95	2/9/96	3/19/97	12/29/98	Data Source (USGS Gage Number or Data Filling Method)
1	Woods Creek.	64.4	25	X	X	X															12141000 (Woods)
							X	X	X	X	X	X	X	X	X						Correlation w/ Cherry Creek
																X	X	X	X	X	12155300 (Pilchuck)
2	Youngs Creek, McCoy Creek, and Local	49.7	33.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Correlation w/ HSPF (Cherry Creek)
3	Sultan River	104.9	34.4	X	X																Route w/ Correlation w/ 12135000 (Wallace)
						X	X	X													Route w/ Correlation 12135000 (Wallace)
									X	X	X										Route Spada w/ 12137260 and 12137200
												X	X	X	X				X	X	12138160
																X	X	X			12137800
4	Wallace River	65.6	35.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12135000 (Wallace)
5	Haystack and Local	48.7	44.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Correlation/Wallace River
6	Upper Skykomish and Local	557.2	49.27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12134500
7	Cherry Creek	27.9	6.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HSPF Modeling
8	Tuck Creek and Local	20.5	10.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HSPF Modeling
9	Ames Lake	7.7	17.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HSPF Modeling
10	Harris Creek and Local	29.9	23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HSPF Modeling
11	Tolt River, Stossel Creek, and Local	103.6	24.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12148500
12	Griffin Creek	17.6	27.1	X	X																12147000
						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Correlation w/ 12142000 (N.F. Snoqualmie)
13	Patterson Creek and Local	26.7	31.2	X	X																12146000
						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Correlation w/ 12145500 (Raging River)
14	Raging River	38.9	36.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12145500
15	Tokul Creek	34.1	39.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Correlation w/ 12142000 (N.F. Snoqualmie)
16	Lower Coal Creek and Local	6.5	40.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HSPF Modeling
17	Upper Snoqualmie Forks	357.6	40.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12144500

Table 2: **Flood Frequency Discharges for Snoqualmie, Skykomish and Snohomish Rivers**

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES(CFS)			
		10-YR	50-YR	100-YR	500-YR
Snoqualmie River					
near Snoqualmie:	375	51,700	71,100	79,100	95,200
near Carnation (total):	603	58,200	82,400	91,800	113,300
Carnation (mainstem):		57,700	72,900	77,400	86,500
Carnation (overflow):		400	9,500	14,300	26,800
at Duvall (total):	Not available	53,400	75,800	84,600	99,700
Duvall (mainstem):		22,000	26,700	26,300	24,500
Duvall (overflow):		31,400	49,100	58,300	75,200
Skykomish River					
near Gold Bar:	535	75,300	106,100	119,300	149,900
Snohomish River					
near Monroe:	1,537	120,700	174,400	196,800	242,900

* Locations listed are for model cross-sections located adjacent to the existing USGS gages.

Table 3: HEC-RAS Model Cross-Section Information

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snohomish River Mainstem	20.42	Snoh-AU	Field survey, 2004	Topographic map, 2004
Snohomish River Mainstem	20.7	Snoh-AV	Field survey, 2004	Topographic map, 2004
Snohomish River Mainstem	20.94	Snoh-AW	Field survey, 2004	Topographic map, 2004
Snohomish River Mainstem	21.24	Snoh-AX	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	0.16	Sky-A	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	0.160154		Interpolated	Interpolated
Skykomish River Mainstem 1	0.21	Sky-B	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	0.39	Sky-C	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	0.62	Sky-D	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	0.765		Interpolated	Interpolated
Skykomish River Mainstem 1	0.92	Sky-E	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	1.14	Sky-F	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	1.33	Sky-G	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	1.53	Sky-H	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	1.65	Sky-I	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	1.91	Sky-J	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	2.07	Sky-K	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	2.32	Sky-L	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	2.56	Sky-M	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	2.8	Sky-N	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	2.94		Interpolated	Interpolated
Skykomish River Mainstem 1	3.09	Sky-O	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 1	3.21982		Interpolated	Interpolated
Skykomish River Mainstem 1	3.23	Sky-P	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	3.45	Sky-Q	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	3.45016		Interpolated	Interpolated
Skykomish River Mainstem 2	3.5	Sky-R	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	3.595		Interpolated	Interpolated
Skykomish River Mainstem 2	3.71	Sky-S	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	3.83		Interpolated	Interpolated
Skykomish River Mainstem 2	3.96	Sky-T	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Skykomish River Mainstem 2	3.99	Sky-U	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.11	Sky-V	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.31	Sky-W	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.53	Sky-X	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.64	Sky-Y	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.66	Sky-Z	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.75	Sky-AA	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	4.85	Sky-AB	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.23	Sky-AC	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.48	Sky-AD	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.55	Sky-AE	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.63	Sky-AF	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.7	Sky-AG	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.78	Sky-AH	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.85	Sky-AI	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	5.91	Sky-AJ	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.01	Sky-AK	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.11	Sky-AL	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.27	Sky-AM	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.5	Sky-AN	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.68	Sky-AO	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	6.9	Sky-AP	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	7.12	Sky-AQ	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	7.29	Sky-AR	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	7.54	Sky-AS	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	7.71	Sky-AT	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	7.93	Sky-AU	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	8.15	Sky-AV	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	8.4	Sky-AW	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	8.58	Sky-AX	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	8.72	Sky-AY	Field survey, 2004	Topographic map, 2004
Skykomish River Mainstem 2	8.95	Sky-AZ	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 1	0.17	Sno-A	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	0.22	Sno-B	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	0.41	Sno-C	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	0.69	Sno-D	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	0.89	Sno-E	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	1.08	Sno-F	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	1.31	Sno-G	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	1.51	Sno-H	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 1	1.66	Sno-I	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	1.78	Sno-J	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	1.78018		Interpolated	Interpolated
Snoqualmie River Mainstem 2	1.93	Sno-K	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.17	Sno-L	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.18	Sno-M	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.32	Sno-N	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.54	Sno-O	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.73	Sno-P	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 2	2.94	Sno-Q	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	3.27	Sno-R	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	3.27018		Interpolated	Interpolated
Snoqualmie River Mainstem 3	3.49	Sno-S	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	3.81	Sno-T	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	4.03	Sno-U	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	4.28	Sno-V	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	4.51	Sno-W	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	4.66	Sno-X	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	4.88	Sno-Y	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	5.18	Sno-Z	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	5.51	Sno-AA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	5.62		Interpolated	Interpolated
Snoqualmie River Mainstem 3	5.74	Sno-AB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 3	5.845		Interpolated	Interpolated
Snoqualmie River Mainstem 3	5.97	Sno-AC	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 3	6.06		Interpolated	Interpolated
Snoqualmie River Mainstem 4	6.31	Sno-AD	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	6.31017		Interpolated	Interpolated
Snoqualmie River Mainstem 4	6.61	Sno-AE	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	6.91	Sno-AF	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	7.11	Sno-AG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	7.31	Sno-AH	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	7.67	Sno-AI	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	7.965		Interpolated	Interpolated
Snoqualmie River Mainstem 4	8.27	Sno-AJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	8.55	Sno-AK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	8.79	Sno-AL	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	8.88999		Interpolated	Interpolated
Snoqualmie River Mainstem 4	9	Sno-AM	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.17	Sno-AN	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.19	Sno-AO	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.4	Sno-AP	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.55	Sno-AQ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.645		Interpolated	Interpolated
Snoqualmie River Mainstem 4	9.75	Sno-AR	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	9.89	Sno-AS	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	10.02	Sno-AT	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	10.25	Sno-AU	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	10.51	Sno-AV	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	10.76	Sno-AW	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	10.92	Sno-AX	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	11.13	Sno-AY	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	11.27	Sno-AZ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	11.47	Sno-BA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	11.76	Sno-BB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	11.96	Sno-BC	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	12.2	Sno-BD	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	12.4	Sno-BE	Field survey, 2004	Topographic map, 2004

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Snoqualmie River Mainstem 4	12.76	Sno-BF	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	13.15	Sno-BG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	13.28	Sno-BH	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	13.82	Sno-BI	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	13.87	Sno-BJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	13.9	Sno-BK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	14.1	Sno-BL	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	14.3	Sno-BM	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	14.5	Sno-BN	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	14.76	Sno-BO	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	15.08	Sno-BP	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	15.29	Sno-BQ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	15.63	Sno-BR	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	15.84	Sno-BS	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 4	16.18	Sno-BT	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	16.48	Sno-BU	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	16.4801		Interpolated	Interpolated
Snoqualmie River Mainstem 5	16.75	Sno-BV	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	17.42	Sno-BW	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	17.63	Sno-BX	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	17.89	Sno-BY	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 5	18.2698		Interpolated	Interpolated
Snoqualmie River Mainstem 5	18.28	Sno-BZ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	18.7	Sno-CA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	18.7001		Interpolated	Interpolated
Snoqualmie River Mainstem 6	19	Sno-CB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	19.3	Sno-CC	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	19.58	Sno-CD	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	19.82	Sno-CE	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	20.07	Sno-CF	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	20.27	Sno-CG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	20.375		Interpolated	Interpolated
Snoqualmie River Mainstem 6	20.49	Sno-CH	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 6	20.71	Sno-CI	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	20.93	Sno-CJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.28	Sno-CK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.4	Sno-CL	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.55		Interpolated	Interpolated
Snoqualmie River Mainstem 6	21.71	Sno-CM	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.785		Interpolated	Interpolated
Snoqualmie River Mainstem 6	21.87	Sno-CN	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.89	Sno-CO	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	21.93	Sno-CP	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	22.005		Interpolated	Interpolated
Snoqualmie River Mainstem 6	22.09	Sno-CQ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	22.175		Interpolated	Interpolated
Snoqualmie River Mainstem 6	22.27	Sno-CR	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	22.355		Interpolated	Interpolated
Snoqualmie River Mainstem 6	22.45	Sno-CS	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	22.575		Interpolated	Interpolated
Snoqualmie River Mainstem 6	22.71	Sno-CT	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	22.84	Sno-CU	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23	Sno-CV	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.21	Sno-CW	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.51	Sno-CX	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.61	Sno-CY	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.7	Sno-CZ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.75	Sno-DA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.79	Sno-DB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.88	Sno-DC	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 6	23.8998		Interpolated	Interpolated
Snoqualmie River Mainstem 6	23.9	Sno-DD	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	24.07	Sno-DE	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	24.0701		Interpolated	Interpolated
Snoqualmie River Mainstem 7	24.165		Interpolated	Interpolated
Snoqualmie River Mainstem 7	24.27	Sno-DF	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 7	24.38		Interpolated	Interpolated
Snoqualmie River Mainstem 7	24.51	Sno-DG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	24.62		Interpolated	Interpolated
Snoqualmie River Mainstem 7	24.75	Sno-DH	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	24.96		Interpolated	Interpolated
Snoqualmie River Mainstem 7	25.19	Sno-DI	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	25.355		Interpolated	Interpolated
Snoqualmie River Mainstem 7	25.53	Sno-DJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	25.74	Sno-DK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	26	Sno-DL	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	26.19	Sno-DM	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	26.52	Sno-DN	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	26.86	Sno-DO	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	27.15	Sno-DP	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	27.5	Sno-DQ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	27.71	Sno-DR	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	28	Sno-DS	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	28.125		Interpolated	Interpolated
Snoqualmie River Mainstem 7	28.26	Sno-DT	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	28.39		Interpolated	Interpolated
Snoqualmie River Mainstem 7	28.54	Sno-DU	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	28.87	Sno-DV	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	29.23	Sno-DW	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	29.5933		Interpolated	Interpolated
Snoqualmie River Mainstem 7	29.9566		Interpolated	Interpolated
Snoqualmie River Mainstem 7	30.34	Sno-DX	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	30.84	Sno-DY	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	31.15	Sno-DZ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	31.2866		Interpolated	Interpolated
Snoqualmie River Mainstem 7	31.4233		Interpolated	Interpolated
Snoqualmie River Mainstem 7	31.57	Sno-EA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	31.67	Sno-EB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	31.75	Sno-EC	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 7	31.94	Sno-ED	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	32.14	Sno-EE	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	32.57	Sno-EF	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	32.74	Sno-EG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	32.92	Sno-EH	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	33.09	Sno-EI	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	33.43	Sno-EJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	33.53	Sno-EK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	33.71	Sno-EL	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	33.88	Sno-EM	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.02	Sno-EN	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.14	Sno-EO	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.16	Sno-EP	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.22	Sno-EQ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.36	Sno-ER	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.44	Sno-ES	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	34.72	Sno-ET	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35	Sno-EU	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35.23	Sno-EV	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35.41	Sno-EW	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35.59	Sno-EX	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35.76	Sno-EY	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	35.97	Sno-EZ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	36.19	Sno-FA	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	36.43	Sno-FB	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	36.6	Sno-FC	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	36.8	Sno-FD	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	37.02	Sno-FE	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	37.15	Sno-FF	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	37.34	Sno-FG	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	37.51	Sno-FH	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	37.615		Interpolated	Interpolated
Snoqualmie River Mainstem 7	37.72	Sno-FI	Field survey, 2004	Topographic map, 2004

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Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Mainstem 7	37.86	Sno-FJ	Field survey, 2004	Topographic map, 2004
Snoqualmie River Mainstem 7	38.01		Interpolated	Interpolated
Snoqualmie River Mainstem 7	38.16	Sno-FK	Field survey, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.06	OF1-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.16	OF1-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.43	OF1-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.525		Interpolated	Interpolated
Snoqualmie River Overflow 1	0.62	OF1-D	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.705		Interpolated	Interpolated
Snoqualmie River Overflow 1	0.79	OF1-E	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	0.92	OF1-F	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.08	OF1-G	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.21	OF1-H	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.33	OF1-I	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.52	OF1-J	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.71	OF1-K	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	1.815		Interpolated	Interpolated
Snoqualmie River Overflow 1	1.92	OF1-L	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.03	OF1-M	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.13	OF1-N	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.26	OF1-O	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.38	OF1-P	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.5	OF1-Q	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.63	OF1-R	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.745		Interpolated	Interpolated
Snoqualmie River Overflow 1	2.86	OF1-S	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	2.99		Interpolated	Interpolated
Snoqualmie River Overflow 1	3.12	OF1-T	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	3.26		Interpolated	Interpolated
Snoqualmie River Overflow 1	3.4	OF1-U	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	3.64	OF1-V	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	3.795		Interpolated	Interpolated

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Overflow 1	3.95	OF1-W	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	3.96	OF1-X	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	4.19	OF1-Y	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	4.35	OF1-Z	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	4.49	OF1-AA	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	4.65	OF1-AB	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 1	4.8	OF1-AC	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	0.28	OF2-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	0.65	OF2-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	0.95	OF2-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.11	OF2-D	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.2	OF2-E	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.26	OF2-F	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.4	OF2-G	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.51	OF2-H	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.64	OF2-I	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.79	OF2-J	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	1.9	OF2-K	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	2.13	OF2-L	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	2.4	OF2-M	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 2	2.69	OF2-N	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	0.34	OF3-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	0.6	OF3-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	0.76		Interpolated	Interpolated
Snoqualmie River Overflow 3	0.92	OF3-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	1.04		Interpolated	Interpolated
Snoqualmie River Overflow 3	1.16	OF3-D	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	1.33	OF3-E	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	1.53	OF3-F	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	1.75	OF3-G	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	1.94	OF3-H	Topographic map, 2004	Topographic map, 2004

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Overflow 3	2.15	OF3-I	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	2.39	OF3-J	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	2.55		Interpolated	Interpolated
Snoqualmie River Overflow 3	2.71	OF3-K	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	2.97	OF3-L	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.04	OF3-M	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.23		Interpolated	Interpolated
Snoqualmie River Overflow 3	3.47	OF3-N	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.58		Interpolated	Interpolated
Snoqualmie River Overflow 3	3.69	OF3-O	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.71	OF3-P	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.77	OF3-Q	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.81	OF3-R	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.89	OF3-S	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	3.95	OF3-T	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 3	4.1		Interpolated	Interpolated
Snoqualmie River Overflow 3	4.25	OF3-U	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 4	0.26	OF4-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 4	0.41	OF4-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 4	0.52	OF4-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	-0.04	OF5-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.05		Interpolated	Interpolated
Snoqualmie River Overflow 5	0.14	OF5-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.21	OF5-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.28	OF5-D	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.37	OF5-E	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.51	OF5-F	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.61	OF5-G	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.76	OF5-H	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	0.875		Interpolated	Interpolated
Snoqualmie River Overflow 5	0.99	OF5-I	Topographic map, 2004	Topographic map, 2004

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Overflow 5	1.15	OF5-J	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	1.19	OF5-K	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	1.35	OF5-L	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	1.56	OF5-M	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	1.75	OF5-N	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	1.99	OF5-O	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.22	OF5-P	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.65	OF5-Q	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.75	OF5-R	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.79	OF5-S	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.85	OF5-T	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	2.96	OF5-U	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	3.11	OF5-V	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	3.17	OF5-W	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	3.45	OF5-X	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	3.78	OF5-Y	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	4		Interpolated	Interpolated
Snoqualmie River Overflow 5	4.22	OF5-Z	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	4.4	OF5-AA	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 5	4.62	OF5-AB	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	0.4	OF6-A	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	0.67	OF6-B	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	0.85	OF6-C	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	0.99	OF6-D	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.115		Interpolated	Interpolated
Snoqualmie River Overflow 6	1.24	OF6-E	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.36	OF6-F	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.53	OF6-G	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.69	OF6-H	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.76	OF6-I	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.82	OF6-J	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.83	OF6-K	Topographic map, 2004	Topographic map, 2004

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Snoqualmie River Overflow 6	1.86	OF6-L	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	1.95	OF6-M	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	2.02	OF6-N	Topographic map, 2004	Topographic map, 2004
Snoqualmie River Overflow 6	2.15		Interpolated	Interpolated
Snoqualmie River Overflow 6	2.28	OF6-O	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	0.3	Ril-A	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	0.31		Interpolated	Interpolated
Riley Slough Mainstem	0.54	Ril-B	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	0.79	Ril-C	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	1.09	Ril-D	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	1.2	Ril-E	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	1.4375		Interpolated	Interpolated
Riley Slough Mainstem	1.675		Interpolated	Interpolated
Riley Slough Mainstem	1.9125		Interpolated	Interpolated
Riley Slough Mainstem	2.15	Ril-F	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	2.24		Interpolated	Interpolated
Riley Slough Mainstem	2.33	Ril-G	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	2.585		Interpolated	Interpolated
Riley Slough Mainstem	2.84	Ril-H	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	2.96	Ril-I	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	3.24		Interpolated	Interpolated
Riley Slough Mainstem	3.52	Ril-J	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	3.74	Ril-K	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	4.04	Ril-L	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	4.15	Ril-M	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	4.26	Ril-N	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	4.62	Ril-O	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	4.99	Ril-P	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	5.17	Ril-Q	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	5.48	Ril-R	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	5.76	Ril-S	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	5.97	Ril-T	Topographic map, 2004	Topographic map, 2004

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Riley Slough Mainstem	6.07	Ril-U	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	6.34	Ril-V	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	6.48	Ril-W	Topographic map, 2004	Topographic map, 2004
Riley Slough Mainstem	6.63	Ril-X	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.1	Has-A	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.17	Has-B	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.35	Has-C	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.505		Interpolated	Interpolated
Haskel Slough Mainstem	0.67	Has-D	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.69	Has-E	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	0.85	Has-F	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.1	Has-G	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.22	Has-H	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.24	Has-I	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.42	Has-J	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.67	Has-K	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	1.91	Has-L	Topographic map, 2004	Topographic map, 2004
Haskel Slough Mainstem	2.05982		Interpolated	Interpolated
Haskel Slough Mainstem	2.07	Has-M	Topographic map, 2004	Topographic map, 2004
Cherry Creek Mainstem	0.03	Chy-A	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.12	Chy-B	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.17	Chy-C	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.19	Chy-D	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.2	Chy-E	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.204	Chy-F	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.25	Chy-G	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.28	Chy-H	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.33	Chy-I	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.42	Chy-J	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.49	Chy-K	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.57	Chy-L	Field survey, 2003	Field survey, 2003

Cross-Section Identifier			Information Source / Date Generated	
Model River and Reach Name	**HEC-RAS #**	**Work Map Letter**	**Channel**	**Floodplain**
Cherry Creek Mainstem	0.59		Interpolated	Interpolated
Cherry Creek Mainstem	0.61	Chy-M	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.71	Chy-N	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.78	Chy-O	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.86	Chy-P	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	0.94	Chy-Q	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.03	Chy-R	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.11	Chy-S	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.2	Chy-T	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.29	Chy-U	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.33	Chy-V	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.369	Chy-W	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.37	Chy-X	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.374	Chy-Y	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.38	Chy-Z	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.42	Chy-AA	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.45	Chy-AB	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.48	Chy-AC	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.53	Chy-AD	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.55	Chy-AE	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.58	Chy-AF	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.59	Chy-AG	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.67	Chy-AH	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.7	Chy-AI	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.71	Chy-AJ	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.83	Chy-AK	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	1.89	Chy-AL	Field survey, 2003	Field survey, 2003
Cherry Creek Mainstem	2.03	Chy-AM	Topographic map, 2004	Topographic map, 2004
Cherry Creek Mainstem	2.13	Chy-AN	Topographic map, 2004	Topographic map, 2004
Cherry Creek Mainstem	2.26	Chy-AO	Topographic map, 2004	Topographic map, 2004
Cherry Creek Mainstem	2.33983		Interpolated	Interpolated
Cherry Creek Mainstem	2.35	Chy-AP	Topographic map, 2004	Topographic map, 2004

Table 4: Snoqualmie River Floodway Data Table

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-A	Sky-A	898	2,854	58,465	3.5	46.6, 46.6	46.6	47.3	0.7
Sno-B	Sky-B	1,162	3,011	60,876	3.3	46.7, 46.7	46.7	47.4	0.7
Sno-C	Sky-C	2,165	3,559	58,756	3.5	46.9, 46.9	46.9	47.5	0.7
Sno-D	Sky-D	3,643	4,464	70,101	2.9	47.2, 47.2	47.2	47.9	0.7
Sno-E	Sky-E	4,699	4,858	66,634	3.1	47.5, 47.5	47.6	48.1	0.7
Sno-F	Sky-F	5,702	4,971	74,139	2.7	48.0, 48.0	48.0	48.6	0.6
Sno-G	Sky-G	6,917	5,315	76,550	2.7	48.3, 48.3	48.4	48.9	0.6
Sno-H	Sky-H	7,973	6,724	87,358	2.3	48.7, 48.7	48.6	49.3	0.6
Sno-I	Sky-I	8,765	8,177	94,968	1.9	48.8, 48.8	48.9	49.4	0.6
Sno-J		9,398	4,110	64,973	1.6	48.9	48.9	49.5	0.6
Sno-K		10,190	3,670	58,838	1.5	49.0	49.0	49.6	0.6
Sno-L		11,458	3,410	59,078	1.5	49.1	49.1	49.7	0.6
Sno-M		11,510	3,572	58,645	1.5	49.1	49.1	49.7	0.6
Sno-N		12,250	3,500	67,909	1.3	49.1	49.1	49.8	0.7
Sno-O		13,411	3,255	65,784	1.3	49.1	49.1	49.8	0.7
Sno-P		14,414	3,668	77,212	1.1	49.2	49.2	49.9	0.7
Sno-Q		15,523	3,922	75,837	1.1	49.2	49.2	50.0	0.8
Sno-R	OF1-A	17,266	4,187	76,029	1.1	49.2, 49.2	49.2	50.0	0.8
Sno-S	OF1-B	18,427	4,756	77,343	1.1	49.2, 49.3	49.2	50.0	0.8
Sno-T	OF1-C	20,117	4,961	92,162	0.9	49.3, 49.3	49.3	50.1	0.8
Sno-U	OF1-D	21,278	5,224	99,556	0.9	49.4, 49.4	49.4	50.2	0.8

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-V	OF1-E	22,598	5,480	110,739	0.8	49.4, 49.4	49.4	50.2	0.8
Sno-W	OF1-F	23,813	6,204	125,890	0.7	49.4, 49.4	49.4	50.2	0.8
Sno-X	OF1-G	24,605	7,066	135,928	0.6	49.5, 49.5	49.5	50.3	0.8
Sno-Y	OF1-H	25,766	7,788	156,260	0.6	49.5, 49.5	49.5	50.3	0.8
Sno-Z	OF1-I	27,350	8,597	162,192	0.5	49.5, 49.5	49.5	50.3	0.8
Sno-AA	OF1-J	29,093	8,349	154,290	0.6	49.5, 49.5	49.5	50.3	0.8
Sno-AB	OF1-K	30,307	9,736	176,349	0.5	49.5, 49.5	49.5	50.4	0.8
Sno-AC	OF1-L	31,522	10,718	195,325	0.4	49.6, 49.6	49.6	50.4	0.8
Sno-AD	OF1-M	33,317	10,258	190,328	0.5	49.6, 49.6	49.6	50.4	0.8
Sno-AE	OF1-N	34,901	9,136	156,198	0.6	49.6, 49.6	49.6	50.4	0.8
Sno-AF	OF1-O	36,485	8,197	133,337	0.7	49.6, 49.6	49.6	50.4	0.8
Sno-AG	OF1-P	37,541	7,422	118,796	0.7	49.6, 49.6	49.6	50.4	0.8
Sno-AH	OF1-Q	38,597	7,035	108,917	0.8	49.6, 49.6	49.6	50.5	0.8
Sno-AI	OF1-R	40,498	6,326	86,420	1	49.7, 49.7	49.7	50.5	0.9
Sno-AJ	OF1-S	43,666	5,713	78,894	1.1	49.8, 49.8	49.8	50.7	0.9
Sno-AK	OF1-T	45,144	4,774	69,808	1.2	49.9, 49.9	49.9	50.8	0.9
Sno-AL	OF1-U	46,411	4,212	64,054	1.4	50.1, 50.1	50.1	51.0	0.9
Sno-AM	OF1-V	47,520	4,366	58,375	1.5	50.2, 50.2	50.2	51.0	0.9
Sno-AN	OF1-W	48,418	4,268	29,814	2.9	50.4, 50.4	50.4	51.3	0.8
Sno-AO	OF1-X	48,523	4,270	30,148	2.9	50.6, 50.5	50.6	51.4	0.8
Sno-AP	OF1-Y	49,632	4,610	56,052	1.6	51.1, 51.1	51.1	51.8	0.7
Sno-AQ	OF1-Z	50,424	4,619	64,587	1.3	51.4, 51.3	51.4	52.0	0.7

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	**Overflow Cross Section(s)[1]**	**Distance[2]**	**Width (ft)**	**Section Area (sq ft)**	**Mean Velocity (ft/s)**	**Regulatory[3] (ft)**	**Without Floodway (ft)**	**With Floodway (ft)**	**Increase (ft)**
Sno-AR	OF1-AA	51,480	4,706	66,796	1.3	51.4, 51.5	51.4	52.1	0.7
Sno-AS	OF1-AB	52,219	4,920	72,265	1.2	51.6, 51.6	51.6	52.3	0.7
Sno-AT	OF1-AC	52,906	4,710	64,175	0.3	51.6, 51.7	51.6	52.3	0.7
Sno-AX		57,658	4,253	61,149	1.4	51.8	51.8	52.5	0.7
Sno-AY		58,766	4,468	74,758	1.2	52.0	52.0	52.6	0.7
Sno-AZ		59,506	4,598	74,866	1.2	52.0	52.0	52.7	0.7
Sno-BA		60,562	4,791	68,438	1.3	52.1	52.1	52.8	0.7
Sno-BB		62,093	4,750	54,454	1.6	52.2	52.2	52.9	0.7
Sno-BC		63,149	4,750	54,346	1.6	52.3	52.3	53.1	0.7
Sno-BD		64,416	4,600	55,790	1.6	52.5	52.5	53.2	0.7
Sno-BE		65,472	4,600	50,712	1.7	52.6	52.6	53.4	0.8
Sno-BF		67,373	4,800	48,509	1.8	52.8	52.8	53.6	0.8
Sno-BG		69,432	4,500	42,841	2.1	52.9	52.9	53.7	0.8
Sno-BH		70,118	4,400	50,075	1.8	52.9	52.9	53.7	0.8
Sno-BI		72,970	4,500	44,665	2	53.0	53.0	53.8	0.8
Sno-BJ		73,234	4,400	43,230	2	53.1	53.1	53.9	0.8
Sno-BK		73,392	4,400	43,002	2.1	53.2	53.2	54.0	0.8
Sno-BL		74,448	4,250	47,323	1.9	53.4	53.4	54.2	0.8
Sno-BM		75,504	3,850	46,678	1.9	53.6	53.6	54.4	0.8
Sno-BN		76,560	3,300	36,781	2.4	53.8	53.8	54.5	0.8
Sno-BO		77,933	4,150	40,509	2.2	54.2	54.2	55.0	0.8
Sno-BP		79,622	4,125	47,041	1.9	54.4	54.4	55.3	0.8

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-BQ		80,731	4,100	48,073	1.9	54.5	54.5	55.3	0.8
Sno-BR		82,526	3,950	43,092	2.1	54.7	54.7	55.5	0.8
Sno-BS		83,635	4,100	41,102	2.2	54.9	54.9	55.7	0.8
Sno-BT		85,430	4,400	37,981	2.4	55.3	55.3	56.0	0.8
Sno-BU	OF2-A	87,014	4,858	41,430	2.2	55.3, 55.3	55.3	56.0	0.8
Sno-BV	OF2-B	88,440	5,928	63,644	1.4	55.6, 55.7	55.6	56.3	0.8
Sno-BW	OF2-C	91,978	6,622	90,166	1	55.7, 55.9	55.7	56.5	0.8
Sno-BX	OF2-D	93,086	6,467	70,266	1.3	55.8, 56	55.8	56.6	0.8
Sno-BY	OF2-E	94,459	6,166	62,325	1.5	56.2, 56.1	56.2	56.9	0.7
Sno-BZ	OF2-G	96,518	4,546	46,585	1.9	56.7, 56.4	56.7	57.3	0.6
Sno-CA	OF2-H, OF3-A	98,736	4,109	54,421	1.7	56.7, 56.5, 56.7	56.7	57.3	0.6
Sno-CB	OF2-I, OF3-B	100,320	4,070	50,855	1.8	56.9, 56.7, 57.0	56.9	57.5	0.6
Sno-CC	OF2-J, OF3-C	101,904	4,775	38,272	2.4	57.5, 57.2, 57.2	57.5	58.2	0.6
Sno-CD	OF2-K, OF3-D	103,382	5,076	46,570	2	58.6, 57.9, 57.3	58.6	59.2	0.6
Sno-CE	OF2-L, OF3-E	104,650	5,787	54,725	1.7	58.8, 58.6, 57.8	58.8	59.4	0.6
Sno-CF	OF2-M, OF3-F	105,970	5,413	48,236	1.9	59.1, 59.1, 58.9	59.1	59.7	0.6
Sno-CG	OF2-N, OF3-G	107,026	5,117	49,577	1.9	59.4, 59.2, 59.0	59.4	60.0	0.6
Sno-CH	OF3-H	108,187	4,863	50,654	1.8	59.6, 60.4	59.6	60.2	0.5
Sno-CI	OF3-I	109,349	3,940	39,050	2.4	60.2, 62.0	60.2	60.7	0.5
Sno-CJ	OF3-J	110,510	4,505	45,888	2	60.9, 62.1	60.9	61.3	0.4
Sno-CK	OF3-K	112,358	3,906	32,898	2.8	61.6, 62.2	61.6	62.1	0.5
Sno-CM	OF3-N	114,629	5,106	29,919	3.1	63.6, 64.3	63.6	64.3	0.7

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-CN	OF3-O	115,474	4,734	30,002	3.1	64.2, 64.5	64.2	65.0	0.8
Sno-CO	OF3-P	115,579	4,658	42,349	2.2	67.9, 64.5	67.9	68.7	0.9
Sno-CP	OF3-Q	115,790	4,720	43,334	2.2	67.9, 64.6	67.9	68.8	0.9
Sno-CQ	OF3-R	116,635	4,717	38,422	2.4	68.0, 64.7	68.0	68.9	0.9
Sno-CR	OF3-S	117,586	4,683	38,205	2.5	68.3, 64.8	68.3	69.2	0.8
Sno-CS	OF3-T	118,536	4,060	29,580	3.2	68.6, 64.9	68.6	69.4	0.8
Sno-CT	OF3-U	119,909	2,603	24,994	3.8	69.8, 67.1	69.8	70.6	0.8
Sno-CU		120,595	1,950	21,178	4.4	71.0	71.0	71.9	0.8
Sno-CV		121,440	1,900	19,049	4.9	72.7	72.7	73.5	0.8
Sno-CW		122,549	1,600	19,665	4.8	74.2	74.2	75.2	1.0
Sno-CX		124,133	1,800	17,744	5.3	76.0	76.0	76.8	0.9
Sno-CY		124,661	1,797	20,165	4.7	76.9	76.9	77.6	0.7
Sno-CZ		125,136	1,788	20,620	4.1	77.7	77.7	78.5	0.8
Sno-DA		125,400	1,600	18,131	4.7	78.0	78.0	78.8	0.8
Sno-DB		125,611	1,700	17,592	4.8	77.8	77.8	78.6	0.8
Sno-DC		126,086	2,100	29,527	2.9	78.5	78.5	79.3	0.7
Sno-DD		126,192	2,096	33,692	2.5	79.2	79.2	79.9	0.7
Sno-DE	OF4-A	127,090	2,019	34,950	2.4	79.2, 79.2	79.2	79.9	0.7
Sno-DF	OF4-B	128,146	3,214	49,109	1.8	79.3, 79.4	79.3	80.1	0.7
Sno-DG	OF4-C, OF5-A	129,413	3,971	58,998	0.4	79.5, 79.5, 79.5	79.5	80.3	0.8
Sno-DH	OF5-B	130,680	1,972	35,290	1	79.5, 79.5	79.5	80.3	0.8
Sno-DI	OF5-C	133,003	5,376	75,091	1.1	79.5, 79.5	79.5	80.3	0.8

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-DJ	OF5-D	134,798	5,305	75,353	1.1	79.5, 79.6	79.5	80.3	0.8
Sno-DK	OF5-E	135,907	5,322	68,282	1.2	79.6, 79.6	79.6	80.4	0.8
Sno-DL	OF5-F	137,280	5,394	73,289	1.2	79.6, 79.6	79.6	80.4	0.8
Sno-DM	OF5-G	138,283	5,561	66,202	1.3	79.6, 79.6	79.6	80.4	0.8
Sno-DN	OF5-H	140,026	5,120	56,474	1.5	79.8, 79.7	79.8	80.6	0.8
Sno-DO	OF5-I	141,821	4,968	54,718	1.6	80.0, 80.0	80.0	80.9	0.9
Sno-DP	OF5-J	143,352	5,495	58,164	1.4	80.2, 80.2	80.2	81.2	1.0
Sno-DQ	OF5-K	145,200	5,701	59,489	1.4	80.4, 80.3	80.4	81.4	1.0
Sno-DR	OF5-L	146,309	5,373	54,909	1.5	80.6, 80.5	80.6	81.6	1.0
Sno-DS	OF5-M	147,840	5,490	55,823	1.5	80.8, 80.8	80.8	81.8	1.0
Sno-DT	OF5-N	149,213	5,441	53,567	1.6	81.1, 81.0	81.1	82.1	1.0
Sno-DU	OF5-O	150,691	4,890	49,199	1.7	81.4, 81.3	81.4	82.3	0.9
Sno-DV	OF5-P	152,434	5,627	46,924	1.8	81.9, 81.4	81.9	82.8	0.9
Sno-DW	OF5-Q	154,334	6,503	48,421	1.8	82.6, 82.5	82.6	83.6	0.9
Sno-DX	OF5-R	160,195	6,871	48,929	1.8	82.9, 83.2	82.9	83.8	0.9
Sno-DY	OF5-S	162,835	4,894	35,989	2.4	83.5, 83.5	83.5	84.3	0.8
Sno-DZ	OF5-T	164,472	4,824	33,599	2.6	84.3, 84.1	84.3	85.1	0.8
Sno-EA	OF5-U	166,690	4,646	41,293	2.1	85.0, 84.8	85.0	85.7	0.7
Sno-EB	OF5-V	167,218	4,895	48,048	1.8	85.1, 85.3	85.1	85.9	0.8
Sno-EC	OF5-W	167,640	4,903	45,814	1.9	85.2, 85.4	85.2	86.0	0.8
Sno-ED	OF5-X	168,643	5,399	45,622	1.9	85.6, 85.8	85.6	86.4	0.8
Sno-EE	OF5-Y	169,699	6,257	60,835	1.4	86.4, 86.3	86.4	87.4	1.0

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sno-EF	OF5-Z	171,970	5,104	38,574	1.2	87.6, 87.0	87.6	88.3	0.8
Sno-EG	OF5-AA, OF6-B	172,867	4,865	37,390	1.3	88.3, 87.0, 88.5	88.3	88.8	0.5
Sno-EH	OF5-AB, OF6-C	173,818	3,752	25,958	3.4	89.5, 87.0, 89.7	89.5	89.8	0.3
Sno-EI	OF6-D	174,715	3,395	28,696	3	90.7, 91.4	90.7	91.0	0.3
Sno-EJ	OF6-E	176,510	2,839	20,978	4.2	92.5, 92.9	92.5	92.9	0.4
Sno-EK	OF6-F	177,038	2,571	20,961	4.2	93.1, 93.7	93.1	93.6	0.5
Sno-EL	OF6-G	177,989	2,181	17,602	5	94.1, 94.3	94.1	94.8	0.7
Sno-EM	OF6-H	178,886	2,296	16,214	5.4	94.9, 94.9	94.9	95.9	1.0
Sno-EN	OF6-I	179,626	1,899	14,126	6.2	96.2, 95.2	96.2	97.1	0.9
Sno-EO	OF6-J	180,259	1,276	15,255	5.7	98.4, 95.4	98.4	99.1	0.7
Sno-EP	OF6-K	180,365	1,267	14,274	6.1	98.8, 95.4	98.8	99.5	0.7
Sno-EQ	OF6-L	180,682	1,249	13,346	6.1	100.3, 95.6	100.3	100.9	0.6
Sno-ER	OF6-M	181,421	1,271	14,349	5.7	101.6, 96.5	101.6	102.2	0.6
Sno-ES	OF6-N	181,843	1,359	15,525	5.3	102.0, 97.2	102.0	102.4	0.4
Sno-ET	OF6-O	183,322	2,085	24,552	3.3	103.2, 98.2	103.2	104.1	0.9
Sno-EU		184,800	2,606	27,882	2.9	103.5	103.5	104.3	0.8
Sno-EV		186,014	3,100	34,729	2.4	103.7	103.7	104.5	0.8
Sno-EW		186,965	3,448	33,330	2.5	103.8	103.8	104.7	0.8
Sno-EX		187,915	2,925	24,543	3.3	104.1	104.1	104.9	0.8
Sno-EY		188,813	2,721	26,214	3.1	104.4	104.4	105.2	0.7
Sno-EZ		189,922	2,172	19,201	4.3	104.7	104.7	105.4	0.7
Sno-FA		191,083	946	9,806	8.4	106.7	106.7	107.1	0.4

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	**Overflow Cross Section(s)[1]**	**Distance[2]**	**Width (ft)**	**Section Area (sq ft)**	**Mean Velocity (ft/s)**	**Regulatory[3] (ft)**	**Without Floodway (ft)**	**With Floodway (ft)**	**Increase (ft)**
Sno-FB		192,350	500	7,968	10.4	110.7	110.7	110.7	0.1
Sno-FC		193,248	434	7,724	10.7	112.8	112.8	113.0	0.2
Sno-FD		194,304	839	13,812	6	115.9	115.9	116.3	0.4
Sno-FE		195,466	1,650	21,951	3.8	116.7	116.7	117.2	0.5
Sno-FF		196,152	1,700	18,344	4.5	117.0	117.0	117.6	0.5
Sno-FG		197,155	846	8,020	10.3	117.2	117.2	117.6	0.4
Sno-FH		198,053	300	7,711	10.3	119.7	119.7	120.0	0.4
Sno-FI		199,162	360	5,459	14.5	119.5	119.5	119.8	0.3
Sno-FJ		199,901	363	7,182	11	122.8	122.8	123.1	0.3
Sno-FK		201,485	188	3,578	22.1	125.4	125.4	125.7	0.3

Notes:

[1] Overflow Cross Section(s) refers to cross sections in a parallel flow reach which are adjacent (touch tip to tip) with a main channel cross section

[2] Distance refers to the main channel distance in feet from the mouth of the river

[3] For rows in the table containing overflow reaches, the order of the Regulatory elevations is main channel first followed by the overflow reaches in the order shown in column 2

Table 5: Skykomish River Floodway Data Table

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sky-A	Sno-A	845	2,854	58,465	3.5	46.6, 46.6	46.6	47.3	0.7
Sky-B	Sno-B	1,109	3,011	60,876	3.3	46.7, 46.7	46.7	47.4	0.7
Sky-C	Sno-C	2,059	3,559	58,756	3.5	46.9, 46.9	46.9	47.5	0.7
Sky-D	Sno-D	3,274	4,464	70,101	2.9	47.2, 47.2	47.2	47.9	0.7
Sky-E	Sno-E	4,858	4,858	66,634	3.1	47.5, 47.6	47.5	48.1	0.7
Sky-F	Sno-F	6,019	4,971	74,139	2.7	48.0, 48.0	48.0	48.6	0.6
Sky-G	Sno-G	7,022	5,315	76,550	2.7	48.3, 48.4	48.3	48.9	0.6
Sky-H	Sno-H	8,078	6,724	87,358	2.3	48.7, 48.6	48.7	49.3	0.6
Sky-I	Sno-I	8,712	8,177	94,968	1.9	48.8, 48.9	48.8	49.4	0.6
Sky-J	Ril-E	10,085	5,220	38,464	3.1	49.1, 49	49.1	49.7	0.6
Sky-K	Ril-F	10,930	5,203	36,600	3.3	49.4, 49.3	49.4	50.2	0.8
Sky-L	Ril-H	12,250	5,325	27,454	4.5	50.0, 49.8	50.0	50.8	0.8
Sky-M	Ril-J	13,517	5,142	30,804	5.1	52.4, 53.1	52.4	52.7	0.3
Sky-N	Ril-K	14,784	4,702	34,784	3.9	54.4, 54.1	54.4	55	0.6
Sky-O	Ril-L	16,315	4,876	35,588	3.9	55.5, 57.2	55.5	56.1	0.6
Sky-P	Ril-M	17,054	3,939	24,210	6.1	55.8, 59.4	55.8	56.3	0.5
Sky-Q	Ril-N, Has-A	18,216	4,369	28,000	5.3	55.8, 60.2, 55.8	55.8	56.3	0.5
Sky-T	Has-D	20,909	1,347	12,714	11.4	58.4, 58.7	58.4	58.8	0.4
Sky-U	Has-E	21,067	1,300	13,245	11	58.6, 59.8	58.6	59.1	0.4
Sky-V	Ril-P, Has-F	21,701	3,381	31,981	4.6	60.9, 62.5, 61.4	60.9	61.7	0.8
Sky-W	Ril-Q, Has-G	22,757	4,450	36,336	4	62.1, 63.5, 62.5	62.1	63.1	0.9
Sky-AA	Ril-S, Has-K	25,080	4,982	41,309	3.6	65.0, 64.5, 64.5	65.0	65.7	0.7

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	Overflow Cross Section(s)[1]	Distance[2]	Width (ft)	Section Area (sq ft)	Mean Velocity (ft/s)	Regulatory[3] (ft)	Without Floodway (ft)	With Floodway (ft)	Increase (ft)
Sky-AB	Ril-T, Has-L	25,608	4,953	41,036	3.6	65.2, 65.4, 65.1	65.2	65.9	0.6
Sky-AC	Ril-U, Has-M	27,614	4,185	28,252	2.6	66.9, 65.8, 66.7	66.9	67.4	0.6
Sky-AK	Ril-V	31,733	3,291	20,800	7.1	70.4, 68.3	70.4	70.6	0.2
Sky-AL	Ril-W	32,261	2,759	19,947	7.4	71.3, 70.5	71.3	71.7	0.3
Sky-AM	Ril-X	33,106	2,630	20,267	7.3	73.0, 72.3	73.0	73.7	0.7
Sky-AN		34,320	2,445	29,091	5.1	76.0	76.0	76.7	0.7
Sky-AO		35,270	2,847	26,118	5.6	76.8	76.8	77.5	0.8
Sky-AP		36,432	3,298	29,989	4.9	78.3	78.3	79	0.7
Sky-AQ		37,594	3,058	35,655	4.1	79.6	79.6	80.4	0.8
Sky-AR		38,491	2,577	27,305	5.4	80.0	80.0	80.8	0.8
Sky-AS		39,811	3,100	32,605	4.5	81.3	81.3	82	0.7
Sky-AT		40,709	3,214	30,664	4.8	82.2	82.2	82.8	0.6
Sky-AU		41,870	3,553	26,980	5.5	83.1	83.1	83.9	0.8
Sky-AV		43,032	3,508	28,155	5.2	84.7	84.7	85.7	1
Sky-AW		44,352	3,495	36,911	4	86.6	86.6	87.6	1
Sky-AX		45,302	3,408	38,164	3.9	87.6	87.6	88.5	0.9
Sky-AY		46,042	3,125	30,689	4.8	88.2	88.2	89.2	1
Sky-AZ		47,256	3,000	30,115	4.9	89.3	89.3	90.2	0.9

Notes:

[1] Overflow Cross Section(s) refers to cross sections in a parallel flow reach which are adjacent (touch tip to tip) with a main channel cross section

[2] Distance refers to the main channel distance in feet from the mouth of the river

[3] For rows in the table containing overflow reaches, the order of the Regulatory elevations is main channel first followed by the overflow reaches in the order shown in column 2

[3] For rows in the table where there are overflow reaches the order of the Regulatory elevations is main channel first and then overflow reaches in the order as shown in column 2

Table 6: Snohomish River Floodway Data Table

Flooding Source			Floodway			Base Flood Water Surface Elevation			
Main Cross Section	**Overflow Cross Section(s)[1]**	**Distance[2]**	**Width (ft)**	**Section Area (sq ft)**	**Mean Velocity (ft/s)**	**Regulatory[3] (ft)**	**Without Floodway (ft)**	**With Floodway (ft)**	**Increase (ft)**
Snoh-AU		107,818	1,304	25,415	8.0	42.9	42.9	43.4	0.5
Snoh-AV		109,296	1,635	31,916	6.4	44.4	44.4	45.0	0.6
Snoh-AW		110,563	2,047	36,038	5.7	45.5	45.5	46.2	0.6
Snoh-AX		112,147	2,590	55,133	3.7	46.6	46.6	47.3	0.7

Notes:

[1] Overflow Cross Section(s) refers to cross sections in a parallel flow reach which are adjacent (touch tip to tip) with a main channel cross section

[2] Distance refers to the main channel distance in feet from the mouth of the river

[3] For rows in the table containing overflow reaches, the order of the Regulatory elevations is main channel first followed by the overflow reaches in the order shown in column 2