

**WASHINGTON DEPARTMENT OF ECOLOGY**  
**ENVIRONMENTAL ASSESSMENT PROGRAM**  
**FRESHWATER MONITORING UNIT**  
**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 05B090  
**STATION NAME:** N. F. Stillaguamish River at Oso  
**WATER YEAR:** WY2012  
**AUTHOR:** Don Watt

**Introduction**

Watershed Description

The North Fork (NF) Stillaguamish River Basin is made up of a narrow lowland valley surrounded by steep forested hillsides and a few snow-capped mountain peaks. Elevation ranges from just over 200 feet at the gage to more than 6800 feet at points along the southern boundary of the basin. The mean basin elevation is 2230 feet. The average slope in the basin is calculated as 41 percent. Forest canopy is estimated to cover 75 percent of the basin. Mean annual precipitation is about 85 inches.

Gage Location

The gage is located on the right bank of the NF Stillaguamish River at the north end of Whitman Road Bridge. The gage house is at the same elevation as the roadway; and the slant-pipe drops about 25 feet along the side of an old bridge abutment into the river. The terminal end of the pipe extends into a deep portion of the channel a few feet off shore.

Table 1.

Drainage Area (square miles)	161
Latitude (degrees, minutes, seconds)	48, 16, 20, North
Longitude (degrees, minutes, seconds)	120, 53, 16, West

**Discharge**

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	1280 cfs
Median Annual Discharge (cfs)	1070 cfs
Maximum Daily Mean Discharge (cfs)	10600 cfs
Minimum Daily Mean Discharge (cfs)	183 cfs
Maximum Instantaneous Discharge (cfs)	16000 cfs
Minimum Instantaneous Discharge (cfs)	182 cfs
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	2500 cfs
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	289 cfs
Number of Days Discharge is Greater Than Range of Ratings	None
Number of Days Discharge is Less Than Range of Ratings	None

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

**Narrative**

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**Error Analysis**

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	7%
Weighted Rating Error (% of discharge)	14%
Total Potential Error (% of discharge)	21%

**Rating Table(s)**

Table 4. Rating Table Summary

Rating Table No.	101	303	102
Period of Ratings	10/1/11 to 5/24/12	3/7/12 to 7/16/12	6/1/12 to 9/30/12
Range of Ratings (cfs)	115 to 20100 cfs	97 to 20100 cfs	115 to 20100 cfs
No. of Defining Measurements	37	14	37
Rating Error (%)	14%	14%	14%

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

## Narrative

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## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	0.58 ft
Maximum Recorded Stage (feet)	10.05 ft
Range of Recorded Stage (feet)	9.47 ft
Number of Un-Reported Days	None
Number of Days Qualified as Estimates	30 days
Number of Days Qualified as Unreliable Estimates	None

## Narrative

The 30 days qualified as estimates resulted from gage height instrument drift in comparison to observations of water levels at the primary gage index.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	None
Range of Modeled Stage (feet)	N/A
Range of Modeled Discharge (cfs)	N/A
Valid Period for Model	N/A
Model Confidence	N/A

## Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date

## Activities Completed

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