

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

**STATION ID:** 05A105  
**STATION NAME:** S.F. Stillaguamish at Jordan Rd Bridge  
**WATER YEAR:** 2020  
**AUTHOR:** Paul D. Anderson

**Introduction**

Watershed Description

The basin above this gage covers 181 square miles of steep forested terrain in the North Cascade Mountains. The mean elevation for the basin is 2,450 feet. Elevations range from about 196 feet at the gage to 6,690 feet at the highest point of the headwaters. The mean slope in the basin is over 43 percent. The forest canopy cover was computed in 2001 as 74 percent of the basin. Mean annual precipitation for the basin is 95.5 inches. Basin statistics are provided by the USGS.

Gage Location

The gage house is on the left bank of the South Fork Stillaguamish River at the south end of the Jordan Road Bridge near Granite Falls. The primary gage index is a wire weight gage mounted on the downstream bridge rail.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	181
Latitude (degrees, minutes, seconds)	48.095249° N
Longitude (degrees, minutes, seconds)	-121.974555° W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	1720
Median Annual Discharge (cfs)	1140
Maximum Daily Mean Discharge (cfs)	21300
Minimum Daily Mean Discharge (cfs)	150
Maximum Instantaneous Discharge (cfs)	33500
Minimum Instantaneous Discharge (cfs)	141
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	3230
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	241
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	0
Number of Modeled Days	0

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

Table 2 Discussion (Discharge Statistics)

Discharge at South Fork Stillaguamish River at Jordan Road bridge gaging station reached its lowest point September 15, 2020. Discharge in South Fork Stillaguamish peaked February 1, 2020.

In water year 2020 the discharge record was stable and no days were less than or greater than the range of ratings. In addition, no data were qualified as estimates.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	1.4
Potential Weighted Rating Error (% of discharge)	10.2
Total Potential Error (% of discharge)	11.6

Table 3 Discussion (Error Analysis)

Logger Drift Error is based on a statistical analysis comparing continuous automated gage height readings with quality assurance gage height observations made during periodic stations visits.

Similarly, the Weighted Rating Error is calculated using a composite analysis of the level of quality assigned to each discharge measurement used to define each rating table.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	4.78
Maximum Recorded Stage (feet)	16.30
Range of Recorded Stage (feet)	11.52

Table 4 Discussion (Stage Record)

Minimum stage occurred during a low flow period in mid September 2020. Maximum stage occurred during high flow conditions caused by a storm event in early February of 2020.

Table 5. Rating Table Summary

Rating Table No.	3		
Period of Ratings	10/1/19-9/30/20		
Range of Ratings (cfs)	45-42,800		
No. of Defining Measurements	26		
Rating Error (%)	10.2		

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 (%)			

Table 5 Discussion (Rating Tables)

Rating 3 is a carry over due to stable control conditions from WY 2019.
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Table 6. Model Summary

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

Table 6 Discussion (Modeled Data)

none
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Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
None.	None.

Table 7 Discussion (Surveys)

None.

Activities Completed

Five streamflow measurements were conducted during water year 2020. Two additional site visits were conducted for stage only measurements and general maintenance.

Appendix

None.