WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 45K090

STATION NAME: White River near Plain, WA

WATER YEAR: 2007

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Introduction

Watershed Description

White River originates in the glaciers and snowfields of prominent peaks and ridgelines (White Mountain, Tenpeak Mountain, High Pass, and Buck Mountain) located due south of Glacier Peak, and flows southeast into Lake Wenatchee. The watershed is bound on the east by Chiwawa Ridge and the west by Wenatchee Ridge. Land cover above the gage consists of predominantly coniferous forest, but also includes riparian woodlands, alpine shrubland, montane grassland, and bedrock/talus slopes. Mean annual precipitation across the watershed above this gage location is 107 inches (U.S. Weather Bureau, 1965).

Gage Location

The telemetered stream gaging station on the White River near Plain was installed on September 19, 2002. The gage is located off Forest Service Road 6400, at the Forest Service Road 6434 (Sears Creek) bridge on the left bank. This location is approximately seven river miles upstream from Lake Wenatchee.

Table 1.

Drainage Area (square miles)	149 (USGS, 2014)
Latitude (degrees, minutes, seconds)	47°52’28” N
Longitude (degrees, minutes, seconds)	120°52’15” W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	937
Median Annual Discharge (cfs)	488
Maximum Daily Mean Discharge (cfs)	8510
Minimum Daily Mean Discharge (cfs)	54
Maximum Instantaneous Discharge (cfs)	10,000
Minimum Instantaneous Discharge (cfs)	50
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	2110
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	99
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0

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

Narrative

Three discharge measurements were taken, ranging from 84 to 842 cfs. Discharge reached its peak on November 6, 2006, during a significant "pineapple express" rain event. This event is the peak discharge for the current period of record at this station. The minimum discharge was recorded during baseflow conditions on October 19, 2006, after a notably dry summer.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	2.6%
Weighted Rating Error (% of discharge)	11.0%
Total Potential Error (% of discharge)	13.6%

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	#7	#8	
Period of Ratings	10/01/2006- 11/15/2006	11/07/2006- 09/30/2007	
Range of Ratings (cfs)	42.2-12,600	87.0-12,600	
No. of Defining Measurements	16	8	
Rating Error (%)	13.2%	10.7%	

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

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

Narrative

The water year began with Table 7, carrying over from the previous water year. In early November, a significant "pineapple express" rain event produced the peak discharge for the period of record at this station. Following the storm, Table 7 was phased into Table 8. During this event, stage fell rapidly, depositing sediment and debris in the control and causing a shift in the rating. Table 8 was valid for the remainder of the water year.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.42
Maximum Recorded Stage (feet)	17.29
Range of Recorded Stage (feet)	14.87
Number of Un-Reported Days	12
Number of Days Qualified as Estimates	30
Number of Days Qualified as Unreliable Estimates	0

Narrative

Unreported days were due to an ice-impacted channel in which the stage-discharge relationship was not valid. The stage record is considered an estimate for 30 days during the water year. Six days were qualified as estimates because the logger drift exceeded 20 percent, and the difference in reported discharge was greater than 0.50 cfs. The remaining 24 qualified days occurred following or in-between periods of ice-impacted data, prior to the first ice free site observation.

Modeled Discharge

Table 6. Model Summary

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

Surveys

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

Type	Date
N/A	N/A

Activities Completed
