

Skagit River near Sedro Woolley

Revision of historic flood peaks

After revising downward the 1921 and earlier flood peaks for the station near Concrete it was felt necessary to revise downward the peak discharges for the same flood for the station near Sedro Woolley. Memorandum by Riggs and Robinson dated 11-14-50 explains the basis of the revisions and lists a table of proposed revisions.

Control conditions are such that an extension of the rating at Sedro Woolley is subject to much greater doubt than the extension of the rating at Concrete.

The assumptions made in the analysis by Riggs and Robinson appear generally reasonable and the proposed revisions should be better than the originally published figures. However, it is possible that the proposed figures for 1909, 1906, 1897, 1896 are still too high.

There was no discussion in the memorandum about measurement No. 7 which plots about 3.5 ft. to the left of the last used rating. However, in the analysis for 1922 the large shift to right from a rating through measurements Nos. 6-8 to one through measurement Nos. 15 and 16 and subsequent small shift to one defined by 66-70 was attributed to the cut-off of Sterling Bend on Nov. 20, 1911. This cut-off about a mile downstream from the station cut more than two miles of river channel around the bend. Such a sizeable cut-off just below the gage could logically cause such a shift. At higher stages with a large overflow area the effect of the cut-off will probably be less.

At Concrete, the 1909 flood would be 220,000 second-feet and the 1921 flood 210,000 second-feet according to the revisions proposed by Riggs and Robinson. However, it is not certain that the same relationship of these two peaks will apply all the way down to the mouth of the Skagit River.

The writer feels that the discharge for the 1909 flood should be determined on the basis of the most logical extension of the rating defined by measurements 6-8 made in 1911, prior to the cut-off. We have pencilled in the measurements and a rough curve and it appears that the 1909 peak at Sedro Woolley could be as low as 165,000 second-feet. If a curve over to left is logical for 1909, it probably should be used for the 1906 flood too, and make all the prior floods.

The writers feel that no revisions of the Sedro Woolley peaks should be made until a study is made and an explanation of the reason why the effects of the Sterling Bend cutoff in November 1911 had no effect at the stage of the 1909 and 1921 floods.

F. J. Flynn
1-25-51