



East Fork Lewis River LOMR

WEST Consultants conducted a hydrologic and hydraulic analysis of the East Fork Lewis River, between River Miles 7.24 and 9.95. The study was conducted at the request of a landowner along the river. The purpose of the analysis was to establish an accurate definition of the 100-year floodplain. Significant errors are associated with the effective Flood Insurance Study delineation of the 100-year floodplain. Specific tasks conducted by WEST Consultants included field survey of channel sections, arrangement of aerial photography and photogrammetric mapping of the study reach, hydrologic analysis of 67 years of gage data using procedures of the U.S. Water Resources Council, hydraulic analysis, and floodplain mapping.

A more accurate delineation of the floodplain was established based on an updated evaluation of the East Fork Lewis River hydrology and new topographic mapping for the study area. The revised hydrology for the East Fork River significantly increases the 100-year peak discharge along the river. Results of the study were used to prepare an application for a Letter of Map Revision (LOMR) to the Federal Emergency Management Agency.



An interesting feature of the hydrologic analysis was that the resultant hydrologic estimates are significantly larger than previous studies. This is due to a significantly longer period of record (67 versus 45 years). Furthermore, a very extreme flood event occurred in February of 1996. It was determined to have a return period well in excess of 100 years. Observations from the February 1996 flood event provided an excellent basis for verification of hydraulic analysis results.

The USCOE HEC-RAS hydraulic model was used to evaluate floodplains and floodways along the East Fork River. A unique feature of the hydraulic analysis was the necessity for evaluation of split flow hydraulic conditions. The main channel and split flow path were considered as separate reaches within the HEC-RAS model. The effective FIS ignored this condition, considering only divided flow conditions. The new study provides a sound definition of the amount of water that can escape from the main East Fork Lewis River channel and defines the water surface profiles along the split flow path.

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