



Goldsborough Creek Dam Removal Hydraulic Design Review

Goldsborough Dam was built in 1921 on Goldsborough Creek near the town of Shelton, Washington. It had a drainage area of about 80 about square miles. The dam was approximately 100 feet long and 14 feet high, constructed of a combination of wood and concrete. It once supplied electricity for the town and diverted water to a Simpson Timber Company paper mill. Simpson Timber Company owned the dam and much of the land around it.

A flood occurred in 1996 that damaged the structure. As a result, Simpson determined that the structure was obsolete and its removal appropriate. The removal of Goldsborough Dam restored access to approximately 14 miles of freshwater habitat for runs of Chinook, Coho and Chum salmon, steelhead, and cutthroat trout. The estimated total project cost was \$4.8 million.

As part of the design process for the project, a preliminary hydraulic design for removal of the existing dam was technically reviewed by WEST Consultants, Inc. for the U.S. Army Corps of Engineers Seattle District. The review included assessment of hydraulic modeling and sediment transport considerations. The review included field reconnaissance of project site conditions, evaluation and testing of the hydraulic model used to model the stream, and development of recommendations for improvement of the final hydraulic design.



A unique aspect of the hydraulic design was the utilization of a series of “weir groups” to reestablish the gradient of the stream in the vicinity of the dam. The channel bed had aggraded and degraded significantly upstream and downstream of the dam. The weirs were used to control the gradient and associated hydraulic and sediment transport conditions in the area of the former structure. Concern about the ability of available hydraulic computer models to appropriately represent the involved hydraulic conditions was addressed by the technical review. Detailed recommendations were provided to improve the hydraulic model and evaluate sediment transport issues for final design.

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