



Christopher R. Goodell, P.E., D. WRE

Senior Hydraulic Engineer

Mr. Goodell is a senior hydraulic engineer with WEST Consultants, Inc and manages the Portland Oregon Office. He has over sixteen years of experience in river mechanics, sediment transport, hydraulic design, and computational hydraulic modeling and is a registered Professional Engineer in the states of Oregon and Alaska. Mr. Goodell possesses a strong educational background in hydraulics, refined at both the International Institute for Hydraulic Engineering (UNESCO-IHE) and at the Corps of Engineers Hydrologic Engineering Center (HEC). His work experience includes watershed hydrology, hydraulic design studies on multipurpose hydropower projects, river and stream restoration, bridge hydraulics studies, flood control projects, sediment/erosion projects, hydraulic computational model development, dam breach studies, and fish passage design. He is an expert and was involved in the development of HEC-RAS and is competent in other hydrologic, and sediment computer modeling programs including HEC-6, HEC-HMS, HEC-ResSim, SMS, RMA-2, Hivel 2D, FLO2-D, CCHE2D, and SAM.

Registration

*Professional Civil Engineer
Oregon No. 52293
Professional Civil Engineer
Alaska No. 12564*

*Diplomate, Water Resources
Engineer, AAWRE No. 00104*

Education

*M.Eng. (Hydraulic Engineering)
International Institute for
Hydraulic Engineering (IHE),
Delft, The Netherlands*

*B.S. (Civil Engineering) Oregon
State University*

Professional Organizations

*ASCE
ASDSO
EWRG-Oregon, Past President
IAHR*

Instructor

Basic HEC-RAS

*Advanced HEC-RAS for
Unsteady Flow*

*Dam Breach Analysis using
HEC-RAS*

*Sediment Transport Analysis
with HEC-RAS*

Blog

www.rasmodel.com

At WEST Consultants, Mr. Goodell worked on a sediment impact analysis of the removal of Milltown Dam in Montana and the fate and transport of slag material in the Upper Columbia River. He also completed the design of a new spillway, stilling basin and exit channel for the Creekside Reservoir in Canyonville, Oregon. The design effort included the hydraulic design of the spillway and associated structures as well as a dam break simulation and sediment transport analysis for the exit channel. Mr. Goodell has completed many hydrologic studies, including a rainfall-runoff relationship re-evaluation for the Tennessee Valley Authority and Probable Maximum Flood development for various dam breach projects nationwide. He was also an editor for the Federal Highways' Hydraulic Engineering Circular No. 26, "Culvert Design for Aquatic Organism Passage." Mr. Goodell has completed numerous bridge hydraulics studies in the state of Oregon, including flood impact assessments, bank protection and scour analyses. He also used CCHE2D to evaluate the hydrodynamics downstream of the Bull Run Dam No.2 Spillway and designed the upgraded stilling basin bank protection. Mr. Goodell has actively taught HEC-RAS courses since 2001. He currently teaches HEC-RAS courses through ASCE and he conceived and developed the "Dam Breach Analysis using HEC-RAS" course. He has worked on over 30 dam breach studies in his career including the Elua and Aepo Reservoirs in Kauai.

Prior to joining WEST Consultants, Mr. Goodell spent over two years employed by the Corps Hydrologic Engineering Center (HEC) where he served on the HEC-RAS development team. While there, he incorporated stable channel design and sediment transport capacity functionality into HEC-RAS, and developed the interface for the Sediment Impact Assessment Model. Mr. Goodell was a technical guidance specialist at HEC and provided consultation and advice on the use of HEC-RAS to hydraulic engineers throughout the United States and around the world. He is widely considered an expert in dam breach analyses using HEC-RAS.

Mr. Goodell also spent over 6 years of his career with the Hydraulic Design Section at the Portland District Corps of Engineers. He worked on the design and analysis of spillways and outlet works, stilling basins, fish passage facilities and other appurtenant hydraulic structures where he gained considerable experience in the use of physical and computational models. While employed at the Corps, Mr. Goodell earned his Master's Degree at the International Institute for Hydraulic Engineering in Delft, The Netherlands (UNESCO-IHE). As part of his program, Mr. Goodell developed a two-dimensional finite difference hydraulic model based on potential flow theory for use in the analysis of a fish bypass spillway design.