Edward E. Donahue, P.E.
Senior Civil Engineer, Vice President

Experience

Ed Donahue's 39 years of civil and hydraulic engineering experience have covered a wide range of design and implementation projects primarily in the areas of fisheries engineering. His project work has included complex fish passage, fish production and fish protection facilities. His fish passage and screening design experience includes work with hydroelectric facilities, diversion structures, and natural barriers, as well as adult trapping and passage structures associated with fish rearing facilities. He has addressed upstream and downstream migration issues with a variety of designs ranging from in-stream enhancement to complex, multiple-stage fishways. He has worked with a variety of fishway designs, including weir and pool, vertical slot, and Denil steep-pass systems. He has developed original designs for resistant board weir applications for a number of adult trapping facilities. Mr. Donahue also has strong expertise in the evaluation and design of alternative technologies for juvenile fish passage past dams. Mr. Donahue's experience with fisheries projects, including new designs, design-build, renovations of fisheries enhancement facilities, have been recognized nationwide, as demonstrated by invitation by the Seattle District Corps of Engineers to be only one of two private sector consultants to participate in the Howard Hanson Dam Fish Passage Technical Committee, represented by members of the Corps, NOAA (NMFS), and public utility agencies.

Selected Projects

Howard Hanson Dam Fish Passage Technical Committee, WA; US Army Corps of Engineers, Seattle District - Member of a selected team of recognized Pacific Northwest fish passage experts charged with the task to determine, assess and evaluate fish passage options at a major dam. Engineering review of the issues involved was coupled with design experience and literature review to recommend the most practical fish passage design for this complex situation. New and existing material from projects in Canada through the Pacific Northwest and California were evaluated leading to unique recommendations for the Seattle Corps and Tacoma Public Utilities. Evaluating a 1200 cfs MIS concept with a fish lock system formed part of the Team's evaluation tasks.

Howard Hanson Dam Fish Passage Design, WA; US Army Corps of Engineers Seattle District - Project Manager of a fish monitoring station located at Howard Hanson Dam on the upper Green River. The purpose of the design was to safely pass fish through the discharge structure, sort juvenile salmon by basin origin, and the to reduce the volume of water to allow sorting to occur. Currently, the design is at the 35% level and is progressing.

Mid-Columbia Mainstem Habitat Conservation Plan, WA; Douglas County, Chelan County, and Grant County Public Utility Districts - Project Engineer for downstream fish passage aspects of a Habitat Conservation Plan for five consecutive hydropower facilities on the Columbia River. Summarized the structural and operational components with regard to their impact on upstream and downstream fish migration, for five individual dams as well as for the mid-Columbia system as a whole. Detailed issues relating to downstream passage methods, including turbine mortality, fish passage efficiency of bypass systems, and collection and transport systems. Participated in agency review meetings regarding required content and level of detail of the plans.

Adams Dam Fish Passage Facilities, Rancho Esquon Partners; CA - Project Manager for fish passage and screening improvements required for this 135 cfs irrigation diversion on Butte Creek, a tributary of the Sacramento River. Two fish passage structures were designed to accommodate the various stream flows and diversion conditions: an Ice Harbor-type fishway for the irrigating season when there is high head differential, and a roughened chute for the non-diversion season. Direct communication with NMFS, USFWS, CDFG and CDWR representatives was necessary to gain approval of this unique screen system and passage configuration within state guidelines. Hydraulic conditions for fish passage were required to meet agency criteria.

Little Goose Dam Juvenile Fish Facilities Modifications, WA; US Army Corps of Engineers, Walla Walla District - Mr. Donahue performed design engineering and project design reviews including development of alternative concepts for the dewatering systems modifications at a major hydroelectric facility that involved complex hydraulics integrated into fisheries engineering concerns.

Butte Falls Hatchery Intake, Smolt Bypass, and Fishway Improvement, OR; Oregon Department of Fish and Wildlife - Design Engineer responsible for modifying an existing 15 cfs fish screen at an ODFW operated steelhead fish hatchery diversion dam intake to meet NOAA criteria. FishPro designed an automated airburst screen cleaning system that will require minimal operation and maintenance, as well as a self-cleaning channel that maintains a constant water level.

Durham Mutual Irrigation District Screen System, CA; Durham Mutual Water Company - This 55 cfs irrigation diversion on Butte Creek, a tributary of the Sacramento River. In addition, NMFS, USFWS, CDFG and CDWR considered the fish passage facilities around the diversion dam inadequate. A new pool and chute fishway was designed along with a state-of-the-art screening system. Mr. Donahue served as FishPro's Project Manager and Design Engineer. Direct communication with CDFG and CDWR representatives was necessary to gain approval of this unique screen system and passage configuration within state guidelines. FishPro formed part of the design team under a design-build contract.

Redlands Fishway and Trap, CO; US Fish and Wildlife Service - Project Engineer responsible for conceptual planning and design of a fisheries facility to allow endangered fish species upstream migration. Design issues consider sediment transport, attraction, biological fish passage criteria, trapping, and sorting to allow segregation of undesirable fish species.

Nez Perce Tribal Hatchery Program, ID; Bonneville Power Administration/Nez Perce Tribe - Project Manager and Engineer for the design of a $16M fisheries facility, involving investigation, and design for both surface and groundwater sources. Strong coordination was required for integrating multiple disciplines including complete design for complex civil, mechanical, electrical, structural and architectural systems involving fish passage and protection at eight locations.

Red River/Crooked River Satellite Hatchery Facilities, ID; US Army Corps of Engineers, Walla Walla District - Project Manager and Civil Design Engineer of new adult salmon trapping and holding facilities involving innovative water intake fish barriers, fish ladders and rearing pond designs. Flow analyses performed by Mr. Donahue included complex facility, screening, fishway and piping hydraulics. The facilities were remotely located and included original intake screen designs, trapping configurations and fish barriers.

Lake Creek Falls Fish Passage Design, OR; Bureau of Land Management - Project Engineer and design review duties that included overall coordination with the funding and reviewing agencies involving a complex multi-stage fishway for anadromous fish passage through a 52-foot vertical elevation that involved two falls. Aesthetics and practical design issues were paramount in this unique project.

Baker River Juvenile Fish Passage, WA; Puget Sound Energy - Project Manager for an innovative screened intake structure and potential modification to the Baker River juvenile fish attraction barge gulper. The screened intake structure included a dual hoist system, a venturi operated fluid transport unit, a high volume compact intake header, relief louvers and many specialized structural components. The attraction barge study involved developing a conceptual level design for doubling the attraction flow to the barge. Various options were developed that both modified the barge structure and utilized two new 35,000 gpm pumps.

Walla Walla River Passage Improvements - Burlingame Screens, WA; Bonneville Power Administration - Project Manager and Design Engineer for conceptual and final design of a 110cfs fish protection screening and by-pass system, including an automated system to control flow to an irrigation canal while controlling water levels to fish diversion screens. An Operations and Maintenance manual was written in liaison with WDFW and the construction was completed by the WDFW Screen Shop. Managed construction activities throughout the FishPro design/build phase.

Ventura River Fish Protection Screen, By-Pass and Fishway, CA; Casitas Municipal Water District - Design Engineer working with Borcalli and Associates responsible for integration of fisheries criteria into the screens, juvenile by-pass, and adult fishway for steelhead (an ESA listed species). Duties included the coordination of mechanical, electrical, and structural engineering design and design reviews, along with fisheries engineering design.

Education
B.S. Civil and Structural Engineering, Chicago Technical College

Professional Registration and Affiliations
Registered Professional Engineer in Washington, Colorado, Illinois, Idaho, Oregon, Montana, Nevada, New Mexico, Manitoba and Alberta, Canada
Association of Conservation Engineers, President 1979-1980
South Kitsap Parks and Recreation Commission, Past Chairman