2011 Local Outstanding Civil Engineering Achievement Awards

The Seattle Section ASCE Local Outstanding Civil Engineering Achievement (LOCEA) Awards recognize projects that have improved the quality of life and contributed to the economic development of the local community, area, or region. These projects represent the successful combination of multiple engineering objectives, including design innovation and excellence, environmental sustainability, cost effectiveness, the effective use of materials, and aesthetics.

2011 Outstanding Civil Engineering Achievement – Structures

Whatcom Middle School Reconstruction
Bellingham, WA

Photo Courtesy Dykman Architects

Project Owner:

Bellingham Public Schools

Project Team:

Reid Middleton, Inc.; Dykeman Architects; Madsen, Kneppers & Associates; Hargis Engineers; Whatcom Middle School Staff; Dawson Construction

Built in 1903, Whatcom Middle School is the oldest school building owned and operated by Bellingham Public Schools. In 2007, Reid Middleton performed seismic evaluations and upgrades design for a $16-million district-wide seismic improvements program. Construction for the seismic improvements work at Whatcom was approximately 90% complete when a devastating fire occurred in November 2009.

The Whatcom Middle School Replacement project began abruptly after the fire damaged the historic school building and displaced the students. To resume school as quickly and as cost-effectively as possible, an innovative building replacement strategy was developed whereby the existing building was used as formwork, a new shotcrete shell was constructed outside the original building, and the damaged interior was replaced with new structure from the inside out.

The result was a new school building that meets the programmatic needs of a modern school and preserves the iconic main entry and architectural character of the original 100-year-old building.

Through an uncommon level of collaboration between the owner, the design team, and the contractor, the fast-tracked project was phased to expedite construction and the project was completed in time for Whatcom Middle School to reopen in less than two years.

2011 Outstanding Civil Engineering Achievement – Water Resources

Brightwater Treatment Plant
Woodinville, WA

Photo (c) Benjamin Benscneider, Courtesy of Brown and Caldwell

Project Owner:

King County Wastewater Treatment Division

Project Team:

CH2M-Hill; Brown and Caldwell; Mithun; Hoffman Construction Company; Kiewit Corporation; HV Engineers; Greenbusch Group; ESA; Paladino and Company; Hargreaves Associates; MacTech/AMEC; Shannon and Wilson; Valley Electric Company; Elcon Electric Company; University Mechanical Company; Hawk Mechanical Company; Northwest Construction; Ohno Construction.

The $500 million Brightwater treatment plant is a state-of-the-art, advanced wastewater treatment and reclamation facility that forms the hub of King County's $1.85 billion Brightwater Regional Wastewater System.

The project's 39-million gallon per day membrane bioreactor makes the Brightwater Plant the largest of its kind in North America. In addition, an innovative split-flow liquids treatment process provides flexibility in peak storm events and reduces costs.

Beyond its utility purpose, the 120-acre treatment plant site incorporates 40 acres of streams and wetlands, 3 miles of trails, overlook structures, and a LEED Platinum-designed environmental education and community center with a public meeting space, areas for interpretive displays, and teaching and laboratory facilities.

The Brightwater team's integrated, multi-disciplined design approach balanced King County's needs for environmental protection, reclaimed water production, affordable construction, odor control, sustainable design, and expansion. The project represents culmination of a highly successful 9-year partnership between King County and its project team.

2011 Honor Award – Small Project or Non-Construction Study

Silver Beach Creek Stormwater Improvements Brownsville Drive to East 16th Place
Bellingham, WA

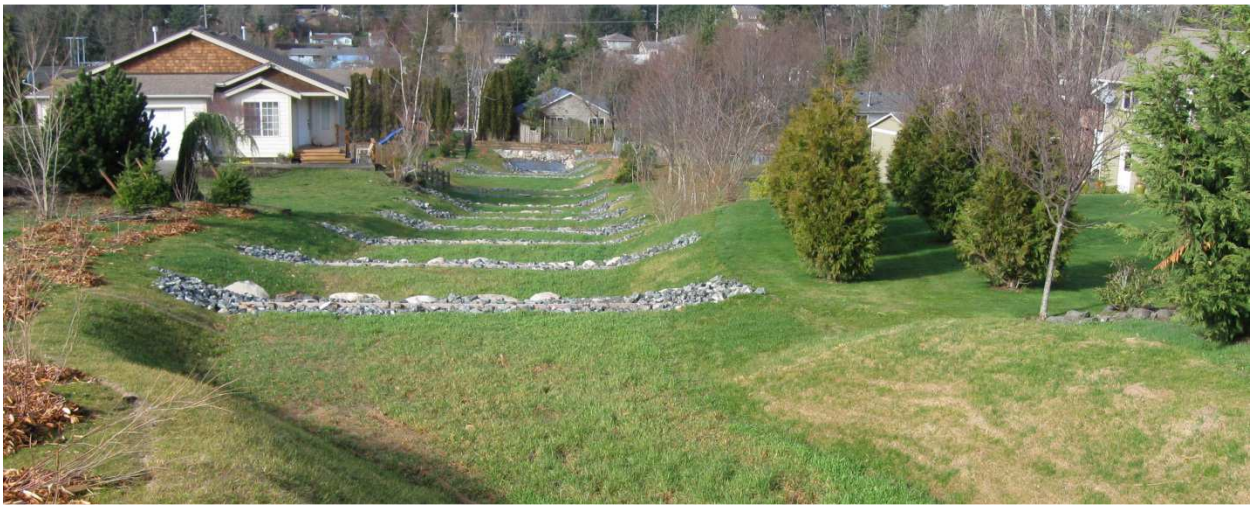

Photo Courtesy Whatcom County

Project Owner:

Whatcom County

Project Team:

Land Development Engineering & Surveying; Osborn Consulting; Colacurcio Brothers Construction Company.

The Silver Beach Creek stormwater improvements support water quality in Lake Whatcom, a critical drinking water source for approximately half of Whatcom County.

The project also benefits the surrounding neighborhood, larger community, and local ecosystem by promoting stormwater infiltration, removing pollutants, reducing erosion, and alleviating flooding.

The $1 million project treated a deeply incised and heavily eroded channel that was contributing phosphorus-laden sediment and fecal coliform bacteria to Lake Whatcom.

Project elements included: vegetated bioswales, a reshaped stream channel with reduced slopes, bank stabilization measures, and stormwater dispersion and treatment vaults.

The project team conquered significant design challenges including a limited amount of right-of-way in a high-density residential neighborhood and a restricted construction timeframe dictated by watershed regulations.

2011 Honor Award – Water Resources

Madison Valley Northwest Diversion and Washington Park Stormwater Storage Seattle, WA

Photo Courtesy Project Team

Project Owner:

Seattle Public Utilities

Project Team:

MWH Americas; Staheli Trenchless Consultants; Aspect Consulting; IMCO Construction & Northwest Boring.

The Madison Valley Northwest Diversion and Washington Park Stormwater Storage Project attenuates peak stormwater flows and alleviates local flooding resulting from when sluiced fill replaced the Madison Street Trestle in the early 1900s.

The sewer system built to convey sewage and stormwater out of the basin was not adequate to convey the flows generated by extreme storm events, causing chronic flooding problems in the neighborhood, the most tragic being the December 2006 storm during which a homeowner drowned in her flooded basement.

Phase 1 of the $12.5 million project consists of the expansion of the above-ground stormwater holding area at 30th Ave East and East John Street. Phase 2 of the project includes construction of a new 48-inch, 2,500-foot long stormwater pipeline and the construction of 2.2 million gallons of stormwater storage in the southwest corner of Washington Park.

The total storage is divided between a 1.3 million-gallon mostly underground tank, and 900,000 gallons of additional stormwater storage in a bermed landscaped area adjacent to the tank used only during extreme storm events.

2011 Honor Award – Water Resources Engineering

Youngs Creek Hydropower Project
Sultan, WA

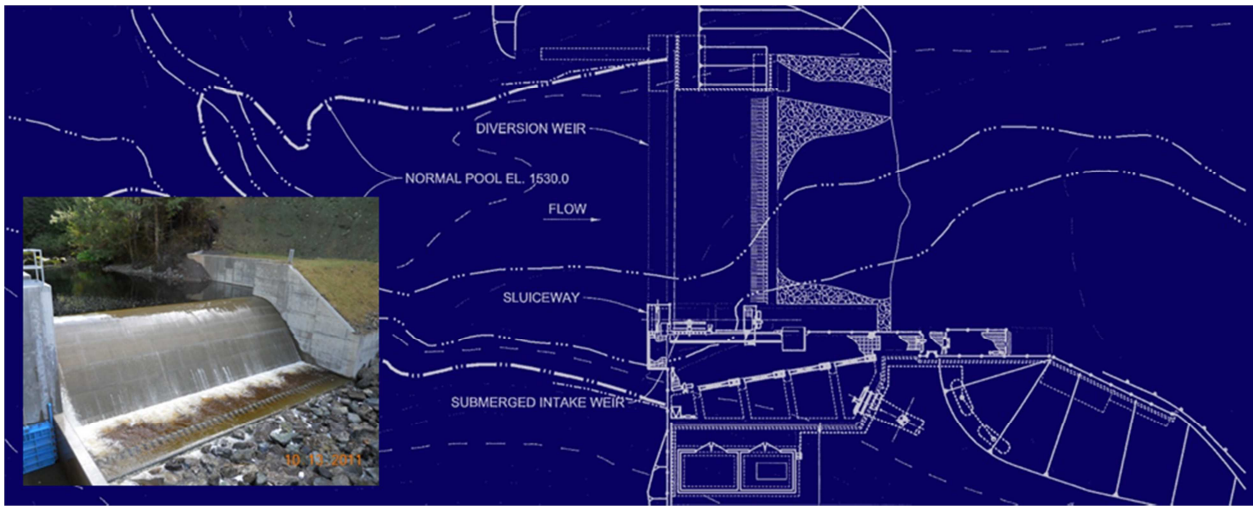

Photo and Illustration Courtesy Snohomish County PUD

Project Owner:

Snohomish County Public Utilities District

Project Team:

EES Consulting

The Youngs Creek Hydroelectric Project was completed in November 2011, and represents the first new hydroelectric facility in Washington State in nearly 20 years.

With a generating capacity of 7.5 megawatts, the project produces enough energy at full-generation for over 6,000 homes. It supplies reliable energy at times of the year when it is needed the most, and at a cost competitive with other green energy sources.

The run-of-the-river project's location upstream of a waterfall avoids adverse effects to salmon and other migratory fish species. A three-mile underground pipeline drops 920 feet in elevation from the intake to the powerhouse.

The Snohomish County Public Utilities District consulted with a broad range of stakeholders, including local, state and federal agencies, the Tulalip Tribes, and community groups throughout the project's development.

The Washington Department of Fish & Wildlife was a key partner in helping to identify adequate levels of river flow and fish protection measures.

The Youngs Creek project gives the Snohomish County PUD greater flexibility in its power supply, providing locally-generated, reliable, cost-effective, and renewable energy that complements wind and solar energy sources.

2011 Honor Award – Small Project or Non-Construction Study

Valley Estates Bank Stabilization and Culvert Replacement
Redmond, WA

Photo Courtesy Otak, Inc.

Project Owner:

City of Redmond

Project Team:

Otak, Inc.; GeoEngineers, Inc.; CRC, Inc.

The Valley Estates Bank Stabilization and Culvert Replacement project provides fish passage to approximately 1,800 feet of a Class II unnamed stream system tributary to the Sammamish River.

The $1.35 million project improves habitat features, enhances stream aesthetics, improves stewardship among the public, and restores sediment transport to one of the few spawning locations within the Sammamish River.

A perched culvert and a weir that imposed fish passage barriers were removed, and an in-line sediment pond was decommissioned. The new replacement culvert allows fish passage and restores habitat connectivity between the Sammamish River and the stream, and the removal of the weir and associated sediment pond provide connectivity between the lower and upper reaches of the tributary.

The project removed a perched culvert and a weir to improve fish passage and decommissioned an in-line sediment pond. The project also re-graded the lower channel, restored the channel mouth, and stabilized stream banks. A high-flow bypass system now diverts erosive flows around the restored reach. Logs, boulders, and other bioengineering measures diversify stream habitat and complexity.

Habitat benefits of the project include the re-establishment of gravel supply; the amelioration of flashy, high flow conditions for aquatic biota during storm events; the removal of invasive plant species; and the creation of wetlands in the Sammamish River floodplain.