**For immediate release:**

ACEC of Maine

Maine Engineering Excellence Awards Announced

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AUGUSTA - As a prelude to the national ACEC competition for the most innovative engineering projects in the country, ACEC of Maine announces their 2019 Engineering Excellence Awards. At this year's awards event, hosted at the University of Maine, five firms received recognition.

**Grand Conceptor Award: VHB for the I-95 Exit 109A Ramp F Bridge**

South Portland based firm VHB received the Grand Conceptor Award, ACEC of Maine's highest award, for its work on the I-95 overpass reconstruction project in Augusta. The Ramp F overpass is located about 1.5 miles from the Maine Statehouse and handles a large amount of traffic into and out of the capitol. The award means the project ranked first among the project in the state based on its engineering quality, innovation, value, and client satisfaction.

When an unknown over-height vehicle struck Ramp F at Exit 109A along I-95, the north and south exterior beams were damaged. VHB responded quickly to MaineDOT, developing a scope of work within two days and starting work immediately upon receiving notice to proceed. Working under an accelerated schedule, VHB rapidly designed the structure’s rehabilitation, presenting alternatives to MaineDOT in days. The selected design was intended not just to repair the damage to the bridge, but to also reduce the number of strikes that may occur in the future by raising the clearance height. The bridge's importance required a prompt repair. It was constructed during the harsh Maine winter months and was completed ahead of schedule in February of 2018, using Accelerated Bridge Construction (ABC) techniques.

“This project was a great collaborative effort from the transportation community here in Maine. The project energized my team at VHB, and not once did we have to ask them to work extra hours to meet the task. All involved simply committed to the goal and worked until the job was done,” said VHB Project Manager Bob Blunt. “It felt as though the transportation community, especially the committed folks at MaineDOT, simply knew this bridge had to be replaced as quickly and safely as possible. It’s one of those times in your career when it hammers home the origins of naming our profession.”

**Honor Award: CES for the Brookfield Renewable Penstock Replacement Project**

CES, Inc., a Maine-headquartered firm of engineers, environmental scientists and land surveyors, has received an Honor Award for their role in the Brookfield Renewable Penstock No. 1 Replacement project in Millinocket, Maine. “CES is proud to receive the Honor Award for Engineering/Contractor Collaboration,” said CES President and CEO Denis St. Peter, PE. “Our team demonstrated how advantageous the design-build project delivery approach can be when the design professionals and construction experts collaborate on solutions.”

This prestigious award recognizes entries that provide an innovative application of techniques and successfully address complex criteria as well as engage with the client in the overall project development. Sargent Corporation, the general contractor, and CES took a team approach in solving the issues associated with this project. Brookfield Renewable Energy operates the hydro-electric system that formerly powered the Great Northern Paper Mill in Millinocket, Maine. Penstocks, 10 feet in diameter, drive hydroelectric turbines downstream in a Powerhouse. They run below Fergusson Lake and the last 125 feet is directly beneath the Powerhouse. The team faced unique challenges because the integrity of the building and its foundations needed to be maintained and Penstock No. 1 required smaller replacement units than those previously identified for Penstock No. 3. CES used the original Penstock drawings from the 1900s and Brookfield design and fabrication drawings to design an alignment that reused all of the pre-fabricated sections with only minor adjustments and minimal fabrication of new units. The Penstock was slip-lined under the building, followed by an open excavation/remove/replace approach for sections outside the Powerhouse. Slip-lining an elbow section where it connected to the turbine under the Powerhouse was not possible due to its shape so the contractor placed this piece on air bags downstream from the system discharge in Millinocket Stream, floating it into the tailrace of the Powerhouse, and then hoisting it into place with a rigging system. Installation of this piece required personnel to work on a barge below the Powerhouse.

“Notably, the project was completed three days ahead of schedule, allowing Brookfield to put that turbine back online for power generation,” said Vice President and Senior Project Manager Pete Tuell, PE. CES, working with Sargent Corporation in a design-build team effort, presented the owner options that capitalized on century-old documented history of the site as well as ingenuity born of experience in the field today. Brookfield Renewable Energy is an important member of the Millinocket region, and CES was pleased to take part in maintaining this important energy project.

A 2015-2018 Best Places to Work in Maine, CES, Inc. provides civil and environmental consulting and land surveying services to clients. In business since 1978, CES employs approximately 100 professionals across eight offices in Maine and Florida.

**Honor Award: Sevee & Maher Engineers for City of Bath Landfill Phase 3 Project**

Sevee & Maher Engineers, Inc. (SME) of Cumberland received an Honor Award for Social and Economic Impact for its exemplary work on a project to expand and modernize the Bath municipal landfill in Maine. The Maine Chapter of the American Council of Engineering Companies (ACEC) presented the environmental engineering firm with the 2019 Engineering Excellence Award, in the Environmental category, for the firm’s performance as consultant for the City of Bath Landfill Phase 3 Project.

The project increased the landfill’s lifespan, reduced capital and landfill operational costs, and enhanced environmental protection. SME’s innovative approach and technical design made it possible for the City to gain critical landfill space without expanding the facility’s footprint. The firm’s solution eliminated the need for an existing leachate storage pond, which freed up space while making the landfill more secure and economical to operate. The new design applied modern landfill technology to support the City’s objective to optimize capacity of the municipal solid waste disposal resource.

Diminishing landfill capacity is a growing concern for municipalities. Maine and other New England states face a critical shortage of disposal options for the solid waste that cannot be recycled or reused, as existing landfills and incinerators reach capacity and/or are closed. “The new design optimized the available disposal capacity and made the landfill more efficient to operate and environmentally secure, which will save the City money over time,” according to Senior Project Manager Mike Booth, who oversaw the project for SME. He said the company worked closely with the City to understand the project’s unique complexities and challenges. The upgrade and modernization project increased the landfill’s capacity by approximately 214,000 cubic yards, allowing it to remain open until at least 2029. “Being recognized by our peers and for the work we do is a real honor,” said SME President Peter Maher. “We’re proud of the work we do every day, and I’m really pleased to share this tribute with our whole team.”

**Honor Award: Wright-Pierce for Brunswick Sewer District Wastewater Treatment Facility Upgrade - CMAR Alternative Delivery Method**

Wright-Pierce received the Honor Award for Shaping Future Project Procurements for its work on the Brunswick Sewer District (BSD) Wastewater Treatment Facility Upgrade. Wright-Pierce engineers worked closely with the BSD, which owns, operates, and maintains a 4 million gallons a day wastewater treatment facility (WWTF) serving approximately 4,400 residential and commercial users. Built in 1966, the facility had not been upgraded since 1991. Located on the banks of the Androscoggin River, a tributary of Merrymeeting Bay, the aging facility required extensive upgrades to maintain compliance with discharge regulations. BSD hired Wright-Pierce engineers to provide full design engineering, permitting, and funding assistance, along with construction administration services for the completion of the $22 million WWTF upgrade project.

To best meet BSD's goals, the project was delivered using a Construction Management at Risk (CMAR) method rather than the traditional design-bid-build approach utilized on most municipal WWTF projects. The CMAR method maximized the project scope and minimized project cost through a process of close collaboration among the owner, engineer, and construction manager from the initial design stage, through construction.

The CMAR approach resulted in numerous benefits, including enabling the Owner to obtain a Guaranteed Maximum Price (GMP) to confirm adequate funding for the project before entering into a construction contract; consistent owner and construction manager input to streamline design decisions and control construction costs, construction sequencing, and schedule; the pre-purchase of materials and equipment to avoid future market price increases; construction sequencing and fast-tracking of specific improvements in order to keep the facility in operation during construction; and a shorter design and construction schedule. Cost savings realized by using the CMAR method were used to complete "stretch goals" not originally included due to budget constraints and shared between the Owner and Construction Manager.

The facility improvements which will improve effluent water quality include new headworks addition with mechanical screening, septage receiving, and influent flow measurement; replacement of the primary and secondary clarifier sludge removal mechanism, conversion of hydraulically-driven trickling filters to mechanically-driven; replacement of existing belt filter press dewatering system with new rotary fan dewatering and conveyance system; new chemical storage and feed systems; ancillary plant-wide upgrades, including instrumentation, SCADA, and electrical modifications; and a new 10,000 foot maintenance garage to consolidate operations and maintenance functions. The project also improved energy efficiency with new equipment, updated building systems, automated processes including modification to the solids handling facilities and sludge dewatering equipment to reduced electricity consumption and the chemicals required to optimize treatment. All of these improvements will deliver significant operational cost savings.

This was the first project in Maine to use the alternative CMAR delivery approach and receive DEP Clean Water SRF Funding. As a result of this project, Maine DEP is proposing draft rule changes to Chapter 595 Rules to better accommodate the CMAR delivery method on future projects.

**Honor Award: Woodard & Curran for the Reach Road UV & Ozone Treatment Facility Upgrades**

Woodard & Curran has earned an Honor Award for Unique Solutions for a Small Community. The firm earned this recognition for its work with the Presque Isle Utilities District to plan, design, and oversee construction of upgrades to the Reach Road Water Treatment Facility. As the Facility, located in Presque Isle, Maine, struggled to reliably produce clean drinking water, onsite wells were tested and determined to be under the influence of surface water originating from the nearby Aroostook River. Surface water influence meant the new groundwater facility, from a regulatory standpoint, would be treated the same as a surface water treatment plant. The District obtained a filtration waiver and installed UV disinfection, but existing systems couldn’t keep up with the widely fluctuating water quality conditions. The river’s influence was greater than the District originally expected, and degradation of water quality at high river elevation repeatedly pushed existing UV reactors outside of their validated range. The degradation in raw water quality associated with high water events in the Aroostook River, and the corresponding impacts on the effectiveness of the UV disinfection system, had decreased the reliability and dependability of the existing treatment strategy.

The District called in Woodard & Curran for an innovative solution to an unusual problem, and the firm performed an in-depth treatment option evaluation. To address extreme swings in treatment needs, Woodard & Curran recommended a combination of existing technologies to provide variable treatment - replacing existing UV reactors validated to a more suitable range and the installation of a third-generation ozone generator for pretreatment. The ozone system was selected as the best lifecycle cost choice to manage the UVT of incoming water, remaining effective throughout a broad water quality range. The plant upgrades designed by Woodard & Curran and adopted by the Presque Isle Utilities District maximized both monetary and community value. The combination UV/Ozone system is an effective, low-life-cycle cost option that exceeds regulatory requirements and allows the District maximum control over operational expenses and in turn, user rates.

The success of this plant has broad implications beyond the City and its residents. Presque Isle is a service center for many surrounding communities and rural families. A reliable, adequate water supply allows Presque Isle to maintain existing businesses, attract new businesses, and meet the needs of those who reside there, and those who travel to the City for goods and services.

The American Council of Engineering Companies congratulates and thanks these engineering firms for their continuing efforts to improve, innovate and design our built environment.

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