



**For immediate release:**  
ACEC of Maine  
Engineering Excellence Awards Announced  
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For additional information, contact  
Dan Diffin at Sevee & Maher Engineers,  
(207) 829-5016 or [dpd@smemaine.com](mailto:dpd@smemaine.com).

AUGUSTA - As a prelude to the national ACEC competition for the most innovative engineering projects in the country, ACEC of Maine announces their 2021-22 Engineering Excellence Awards. At this year's virtual awards event, five firms received recognition. The American Council of Engineering Companies congratulates and thanks these engineering firms for their continuing efforts to improve, innovate and design our built environment.

### **Grand Conceptor Award**

*Stantec for the Gardiner Downtown Bridges and Trail Project*

Stantec was honored with ACEC of Maine's top honor for its work on the *Gardiner Downtown Bridges and Trail Project*. The award means the project ranked as the top project in the state based on its engineering quality, innovation, value, and client satisfaction.

Global design firm Stantec led project design and provided construction support for the Maine Department of Transportation (MaineDOT) project involving the replacement of two century-old bridges, along with the addition of a multi-use trail with bridge and updates to two signalized intersections. The final phase of a comprehensive transportation improvement project in Gardiner's historic downtown is now complete with the opening of the Bridge Street Bridge in November 2020 and finish work in the spring of 2021.

The Bridge Street Bridge, which was originally built in 1917 to bring Route 201 over the Cobbosseecontee Stream, was opened to traffic after a complex lateral slide installation of a new 700-ton single span structure. Completed during a 35-day closure using Accelerated Bridge Construction methods, this was only the second such highway bridge replacement completed in the state.

The completion of the Bridge Street Bridge follows the 2019 replacement of the Maine Avenue Bridge through an accelerated 13-day bridge closure. The Maine Avenue Bridge was built in 1933 to carry Route 24 over the Cobbosseecontee Stream. These bridge updates, coupled with complementary roadway and trail improvements, bring a substantial set of multi-modal mobility improvements to this historic downtown.

“Planning and design of a bridge replacement in a bustling and distinctive downtown like Gardiner requires an extensive level of collaboration and preparation to ensure that modern

mobility upgrades still complement a community's character and needs. For example, our design for the Bridge Street replacement took particular care to accommodate a unique rail car diner connected to the side of the existing bridge," said Tim Merritt, principal with Stantec. "By utilizing our experience in Accelerated Bridge Construction, we're proud to have completed this project with minimal disruption to the community, the nearby historic properties, and the endangered fish species that call the Cobbosseecontee Stream home."

As part of its project role for MaineDOT, Stantec designed the two bridge replacements as well as a recreational trail bridge that connects to the Kennebec River Rail Trail. Trail enhancements include landscaping; use of salvaged granite; ornamental lighting; interpretive panels celebrating the stream's historic dams, fish species, and birds of prey; and safety features. Additional project considerations included utility relocations, endangered fish species protection, and remediation of contaminated soils.

Reed & Reed, Inc. served as project general contractor with McGee Construction as the earthwork subcontractor. Additional key design subconsultants are Haley & Aldrich for geotechnical and TMSI for signalized intersections and utility coordination.

### **Honor Award for Economic Benefit to Client**

*Haley & Aldrich for the Children's Museum & Theatre of Maine*

Haley & Aldrich, an environmental and geotechnical engineering consulting firm, provided geotechnical engineering services for the recently completed Children's Museum & Theatre of Maine (Museum), which was constructed on Thompson's Point, along Portland's historic waterfront. A highly collaborative alternative's analysis was completed by the design team, construction manager and Museum to determine a building foundation support alternative that resulted in substantial cost savings that better enabled the Museum to meet the needs of their education mission through the 21st century.

The subsurface conditions present at Thompson's Point consist of highly compressible harbor bottom and marine clay deposits and are some of the most challenging in the region. The project team realized early on that a collaborative approach to identify, evaluate, vet, design, and price technically feasible foundation support alternatives would be needed to reduce risk and to help the Museum towards their mission. Alternatives included piles, below grade space with a mat foundation and ground improvement techniques. Based on their thorough understanding of the compressibility characteristics of the soils present at the site, Haley & Aldrich completed detailed technical analyses and collaborated with the design team, construction manager and the Museum to select the temporary preload-surcharge ground improvement alternative as the preferred option as it was the most cost-effective solution as compared to the other alternatives. This temporary preload-surcharge alternative allowed the new building to be supported on a conventional spread footing foundation system, met the construction schedule and the Museum's risk tolerance, and reduced the overall cost of the project by an estimated \$250,000 while

eliminating adverse impacts to an adjacent building and contributed to making Thompson's Point the new home of the Children's Museum & Theatre of Maine.

"Teamwork and collaboration with the entire team to evaluate, vet, design, and price each alternative made it possible to identify, design and build the most cost-effective foundation system for the new building," said Wayne Chadbourne, Principal Engineer at Haley & Aldrich. "We're very proud to have been a part of such a highly functioning team whose work helped this critical cultural institution find a new home on Thompson's Point."

### **Honor Award for Successful Fulfillment of Client/Owner Needs**

#### *SLR for the Colby College Roundabout Project*

SLR International Corporation (SLR) was responsible for providing design, value engineering, and construction phase services on the recently constructed roundabout located at Colby College, at the intersection of Mayflower Drive and Campus Drive in Waterville, Maine. The key to these improvements was ensuring minimal disruption to the campus activities. This fast-track project needed to be constructed without detouring traffic between the beginning of June and the end of August before students and sports teams returned. SLR supported the accelerated schedule with innovative engineering solutions, and close and responsive coordination with the contractor, Sargent Corporation.

The new roundabout provided improved traffic flow and safety conditions in the area, with an improved, dedicated bus drop-off area and bike paths constructed with materials to increase longevity. The improvements resulted in minimizing tree loss and reclamation of materials.

To mitigate traffic during construction, a unique application of granite curbing was installed using concrete slip forms to allow early paving. SLR completed a Value Engineering analysis that resulted in a cost savings of over \$350,000, minimized utility relocations, and reduced the duration of construction.

The completed project provides operational, safety, and aesthetic benefits to over 2,000 Colby College students, as well as athletic teams, faculty, and the local community.

### **Honor Award for Unique Application of Existing Technology**

#### *Wright-Pierce for the East Side CSO Storage Tank Project*

Wright-Pierce of Topsham, Maine received an Honor Award for their role in helping the Greater Augusta Utility District (GAUD) design a combined sewer overflow (CSO) storage tank to reduce CSO discharges into the Kennebec River.

In Maine, there is a common thread among all communities: protection of the state's waterways and natural resources. GAUD's long-term control plan to reduce CSOs included the construction of a CSO storage tank along its East Side Interceptor Sewer.

GAUD enlisted Wright-Pierce to provide conceptual and final design engineering services for a 1 million gallon prestressed concrete storage tank as part of its CSO mitigation effort. The design was based on GAUD's concept of using a wire-wound, prestressed concrete tank to meet its needs. Typically, a traditional underground tank is utilized for such projects, but GAUD and Wright-Pierce recognized utilization of a tank conventionally used for water storage on a wastewater project would result in cost savings. The project was also able to provide additional site parking and standby power to the entire District campus. The CSO storage tank has performed well and resulted in reduction of over 4 million gallons of CSO discharge in its first year online.

As part of this project, Wright-Pierce also performed an assessment to determine whether the nearby Howard Street Pump Station should be rehabilitated or replaced. The pump station, which was responsible for pumping sanitary flows, was 50 years old and beyond its useful life. It was decided that the most cost-effective approach was replacement of the aging station with a new station as part of the CSO storage tank project. The old pump station was located within Howard Street Park, but the new pump station is located on the same site as the CSO storage tank. This has resulted in the improved appearance of the park.

Kevin Obery, Wright-Pierce's Project Manager for this project, commented that "This was a very interesting project, working with the team from GAUD in fine-tuning the conceptual plan and then preparing the plans and specifications to allow the project to be constructed. The completed project provides an easy-to-operate solution to protect the water quality of the Kennebec River."

### **Honor Award for Sustainable Design Considerations**

#### *Woodard & Curran for the Carrying Place Bridge Replacement*

Woodard & Curran has been presented an ACEC Maine Engineering Excellence Award for the Carrying Place Bridge Replacement project in Vinalhaven, Maine.

Woodard & Curran designed, permitted, and performed construction administration for the replacement of Carrying Place Bridge for the Town of Vinalhaven. Carrying Place Bridge is the sole span connecting Calderwood Neck to the rest of Vinalhaven, a town and island 12 miles off the coast of Rockland in Penobscot Bay.

The major quandary in replacing Carrying Place Bridge was reconciling the client's time and budgetary restraints with other priority concerns: resiliency and aesthetics. Deficiencies in the existing structure meant the town needed to act quickly to replace it or risk having to post or close the crossing - critical infrastructure connecting Calderwood Neck with the rest of the Vinalhaven, where stores, services, amenities, emergency services, and the ferry terminal are located.

In addition to needing a replacement structure to maintain access between Calderwood Neck and the rest of the island, the Town sought a solution that incorporated resiliency measures. Like many islands along the Maine coast, Vinalhaven is vulnerable to sea level rise. The client requested granite blocks from the existing abutment be integrated into the design to maintain the aesthetics of the crossing.

Woodard & Curran engaged an unusual project approach, centering outcomes instead of the expected end product. This creative and collaborative process allowed the project team to provide the client with a budget-friendly solution that achieves the Town's infrastructural, financial, environmental, and cultural priorities.

Following this approach, Woodard & Curran applied existing technology, a precast concrete culvert, in a unique way to solve the multifaceted problem at hand. The precast culvert's relative ease of installation meant a reduction of the project's impact on the surrounding natural resources. The new crossing did not require an expanded footprint and its ease of installation minimized short term impacts to the tidal zone and optimized work crews' opportunities to work in the dry. The result is a functional crossing, accomplished with reduced impact to the natural surroundings, at a lower cost than larger alternatives, and without land acquisition or creation of easements on private property.

The new bridge is a three-sided, pre-cast concrete structure with a span of 19 feet. The deck profile has been raised to an elevation of 14 feet NAVD88 to reduce vulnerability to storm surge and wave events. The crossing roadway was modified to a single-lane, two-way road with associated alternating traffic signage to improve function and safety. In addition to structural considerations, Woodard & Curran incorporated the reuse of the granite blocks from the existing abutments to preserve the visual character of the crossing.

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