ACEC

American Council of Engineering Companies
*of Ohio*

# 2019 Engineering Excellence Awards

March 14, 2019
Bridgewater Banquet & Conference Center
Columbus, Ohio

*"Recognizing engineering firms for projects that demonstrate a high degree of achievement, value and ingenuity."*

# THE ENGINEERING EXCELLENCE AWARDS

The ACEC Ohio Engineering Excellence Awards Competition is a national program that, for over 50 years, has recognized engineering companies for the role they play in developing projects "that demonstrate a high degree of achievement, value and ingenuity."

Every year, engineering companies from across the country enter their most innovative design projects and studies in state competitions, such as ACEC Ohio's, with the top entries from each state advancing to the national competition in Washington.

Projects are judged according to these five criteria:

- Original or Innovative Application of New or Existing Techniques
- Perception by the Public
- Social, Economic, and Sustainable Design Considerations
- Complexity
- Successful Fulfillment of Client/Owner Needs

**Congratulations to all the award winners in the 2019 ACEC Ohio Engineering Excellence Awards Competition!**

## Competition Judges

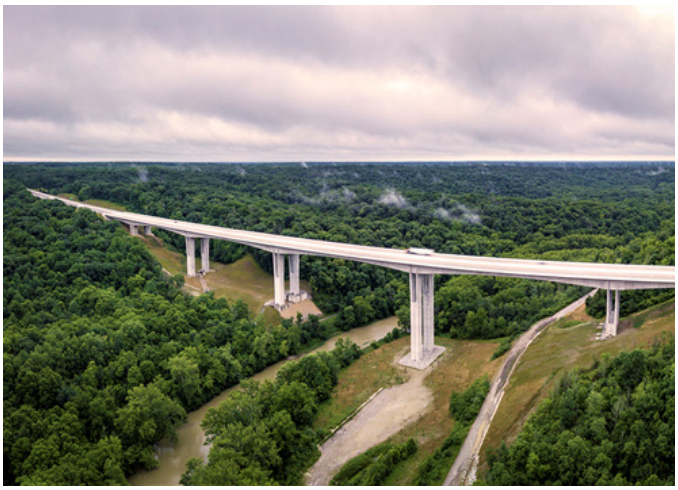
| | |
|---|---|
| **Cash Misel, P.E.** | Former Assistant Director, Ohio Department of Transportation, retired |
| **Jon Link, P.S.** | Civil Engineering & Surveying Program Coordinator, Columbus State |
| **William R. Shelley, P.E.** | Former President, Shelley, Metz, Baumann & Hawk, Inc., retired |
| **Lyle Flower, P.E.** | Former Administrator of Consultant Services, Ohio Department of Transportation, retired |

# *Outstanding Achievement Awards*

## **Jacobs Engineering |** Dublin Road Water Plant Treatment Capacity Increase

The $285 million capital improvements project at the Dublin Road Water Plant (DRWP) expanded the treatment capacity and added state-of-the-art treatment technologies to meet U.S. drinking water regulations. THE DRWP provides drinking water to roughly 400,000 consumers and supplies water to Downtown Columbus. In 2010, Jacobs began work with the City of Columbus Department of Public Utilities (DPU) on what would become one of the largest infrastructure upgrade projects in recent DPU history. The project team led a Blue-Ribbon Panel of Columbus staff and industry experts to evaluate treatment alternatives to meet challenges and select improvements that resulted in approximately $100M in construction cost savings. The project addressed aging infrastructure concerns by upgrading equipment at or near the end of its useful life, and was divided into five construction contracts to sequence improvements on the space-restricted site while providing safe and reliable drinking water to the consumers during the six-year construction period. Completed in 2018, the DRWP improvements resulted in the largest nitrate removal ion exchange facility in the U.S. and the first ozone and biologically active filter treatment combination to be commissioned in Ohio.

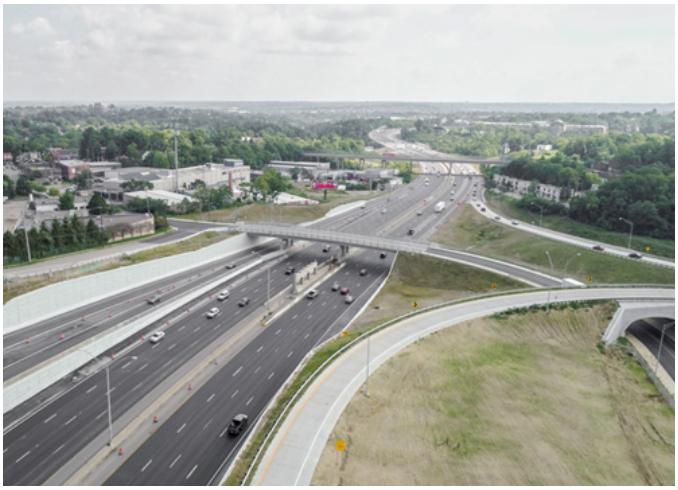
## **HNTB |** Jeremiah Morrow Bridge



The Jeremiah Morrow Bridge, in Warren County, is Ohio's tallest and among its longest bridges. Twin bridges were commissioned after a study in 2000 determined that the then-35-year-old Jeremiah Morrow steel truss bridge could not be widened to accommodate traffic increases. The team pursued a minimalist aesthetic design to not compete with the area's natural beauty, but rather complement and enhance it. The new twin bridge decks support 55-foot-wide roadways, each supported by a one-cell, single box girder. The bridge spans were built using the balanced-cantilever method, which reduced the amount of heavy equipment positioned in the valley floor and precluded the need to lift materials to the work site between active traffic lanes on the old bridges. The bridge design targeted a 75-100 year service life, and the bridges will require far less maintenance than their predecessor. Each bridge is designed to accommodate three lanes of traffic, plus a 10-foot-wide shoulder.

# *Outstanding Achievement Awards*

## **HDR, Inc.** | HAM-71 & Dr. Martin Luther King, Jr. Interchange Design Build



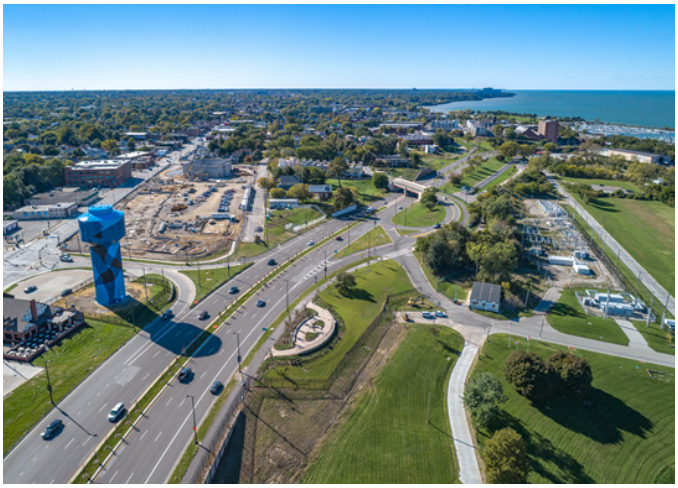
Interstate 71 has been a primary thoroughfare in the state's southwest corner since the 1970s. Seeking to improve access at Martin Luther King (MLK) Drive, the Ohio Department of Transportation (ODOT) turned to the HDR team to design their first competitive two-step design-build project. The project includes four new entrance/exit ramp locations, an expanded MLK Drive bridge, nearly two miles of reconstructed I-71, and eight new or rehabilitated bridges and ramps. Creating a one-of-a-kind interchange, the new I-71 at MLK Drive provides an aesthetically pleasing gateway into Cincinnati's Uptown area. Maintaining traffic throughout the three-year construction timeline proved a distinctive challenge—one solved with multi-phasing construction plans. The project reduces travel times, increases mobility, improves wayfinding and promotes economic growth with an expected $700 million in new development already beginning to take place. HDR's comprehensive design was completed on time and within budget.

## **Strand Associates** | Fairhill-MLK Green Ambassador Project

The Fairhill-MLK Green Infrastructure Ambassador project has been considered one of the premier green infrastructure projects implemented to date by the Northeast Ohio Regional Sewer District (District). The Fairhill-MLK project ultimately consisted of the design of significant sewer separation over an area of approximately 50 acres, water quality treatment and detention in a 20,000-square-foot, two-tiered bioretention basin in Ambler Park, and a new public plaza area with stormwater educational components. Strand was able to combine the functionality of conventional detention basin design with the design principles of bioretention basins on a large scale to treat a much larger drainage area – approximately 50 acres. The project captures and treats approximately 7 million gallons of stormwater per year, reducing combined sewer overflows to Lake Erie by approximately 2 million gallons per year. The use of green infrastructure provides a variety of other benefits, including improving the quality of stormwater runoff through natural treatment processes, planting nearly 15,000 plugs/plants and shrubs, improving air quality, creating environmental habitat, and improving stormwater infiltration.

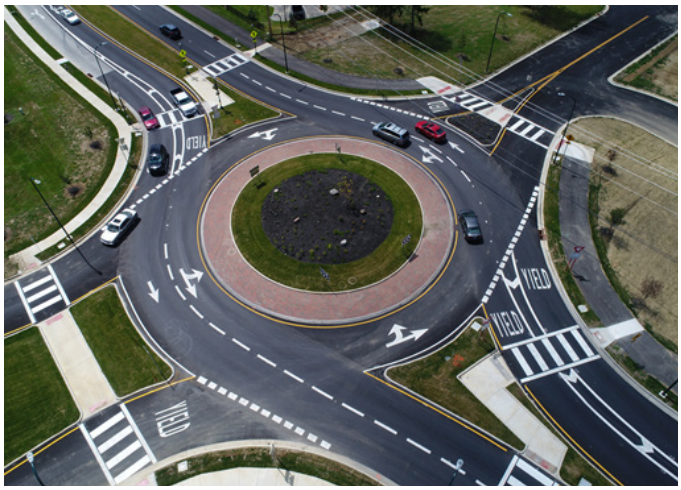
# *Outstanding Achievement Awards*

## **Michael Baker International |** Lakefront West-Mainline (CUY-6-12.20)



As part of the "Lakefront West Project," the City of Cleveland sought to convert a limited-access highway to a low speed, pedestrian-friendly boulevard along a 2.25-mile corridor, connecting the city's west side neighborhoods to Lake Erie. Michael Baker International led the work, including mainline pavement, reconfigured low-speed ramps and intersections, mainline structures and retaining walls, urban design elements, and landscaping. The project's success relied on balancing the needs of various users of the transportation facility (pedestrians, bicycles, vehicles and trucks) while working in cooperation with multiple stakeholders to meet the interests of the community. With the new, improved connections, a multi-use path and pedestrian facilities, developers took advantage of the project to construct new housing, retail, and commercial developments along the corridor. Bus stops were installed to provide transportation services directly to Edgewater Park and West 73rd Street giving better access to Lake Erie.

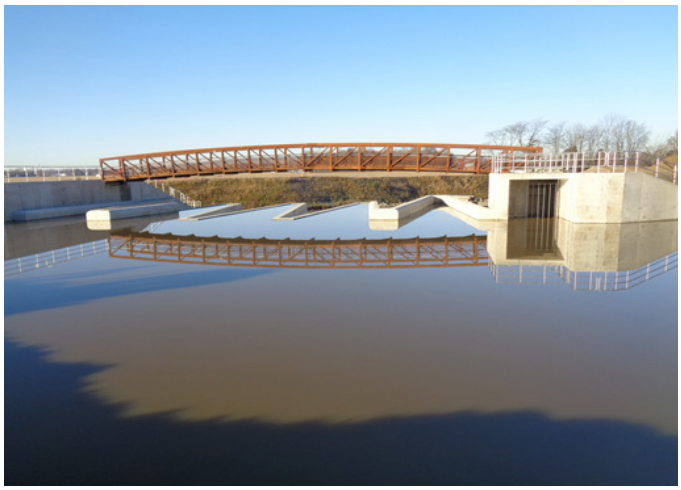
## **ms consultants |** Hamilton Road Widening




Gahanna's Hamilton Road widening project provided critical improvements including increased capacity for a one-mile segment of road while preserving the residential character of the adjacent neighborhoods that lie in between the central business district and the vibrant commercial corridor just north. Through the use of design aesthetics, sidewalks, a shared-use path, and roundabouts to control speeds, ms consultants retained the "local road" feel on this important arterial corridor. The project was constructed in 2017 for almost $13 million. The design included: energy-efficient LED lighting, solar-powered Rectangular Rapid Flashing Beacons for pedestrian safety, landscaping with 100% pollinator-friendly design that supports the "Bee City USA" Initiative, and innovative public engagement and live training sessions on roundabout use. The City has received positive feedback from the community on the project achieving its goals of a pedestrian and bicycle friendly residential corridor with capacity to handle the traffic demands of an important arterial corridor.

# *Outstanding Achievement Awards*

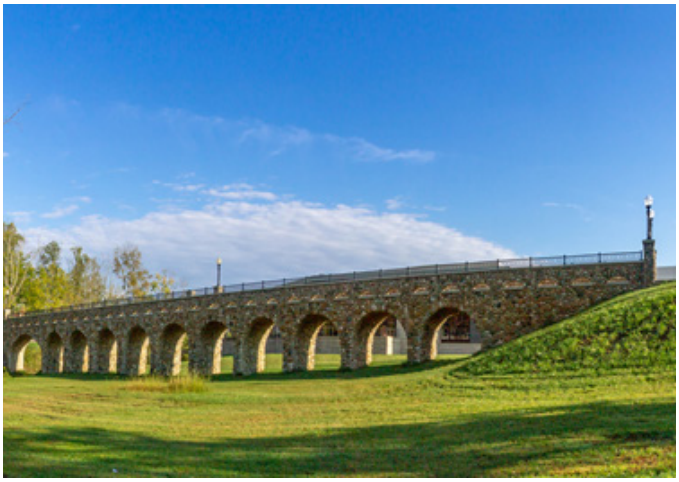
## **Michael Baker International |** Lake Loramie Dam Rehabilitation



Lake Loramie, a recreational lake in Minster, Ohio, underwent a significant dam rehabilitation in 2017. The project was undertaken as part of a statewide initiative by the Ohio Department of Natural Resources to repair and rehabilitate state-owned dams to ensure the safety of Ohio's lakes and surrounding communities. Michael Baker was tasked to design a replacement spillway structure and mimic the hydraulic capacity of the existing structure to avoid flooding upstream and downstream of the dam. To achieve this, the project team provided a sound, cost-effective design that limited impacts to both the environment and local community. This was accomplished by providing a unique labyrinth spillway design that required less of a footprint than traditional spillways. It incorporated cutoffs, filters, drains, and complex control of water phasing plans. The Lake Loramie labyrinth weir is one of the first of its kind to be built and activated in an Ohio state park and is currently a focal point for visitors of the park.

# *Outstanding Small Project Award*

## **THP Limited |** Miami University Pedestrian Bridge Rehab

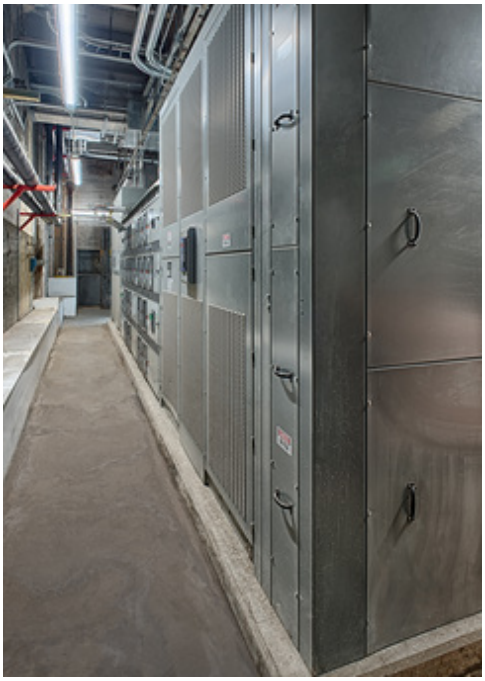


The Western Campus of Miami University in Oxford has a unique style of architecture, with most buildings utilizing stone as the primary facade material. A 100-year old bridge was beginning to succumb to its age and the elements. Keeping with the stone tradition, THP Limited designed a continuous concrete "saddle" below the bridge's surface, to distribute loads effectively, and added steel reinforcement to support a new ornamental guardrail. The stones on the exterior faces were salvaged, cleaned, and reinstalled to closely match their original appearance. Six light piers were built, with additional recessed lights added to increase safety. To prevent moisture migration, a waterproof membrane was applied to the sidewalk, exposed stone walls were sprayed with a water repellent, and new coping stones with through-wall flashing were installed along the parapet tops. Collaborating with all interested parties and honoring the original historic craftsmanship and design, the life of the bridge has been extended for another century.

# *Honor Awards*

## **Karpinski Engineering |** Cleveland Thermal Hamilton Boiler Plant Upgrade

With a $17 million boiler plant upgrade, Cleveland Thermal made the switch from coal to natural gas for steam production. The move allowed Cleveland Thermal to reduce carbon emissions by 84%, meet the United States Environmental Protection Agency's (US EPA) increased emissions requirements, and increase plant efficiency. For this upgrade and keeping with EPA requirements, Karpinski delivered the project in two phases. The team also completed the project with no downtime in steam production, which was essential for Cleveland Thermal. Now the company has increased its plant efficiency while providing cleaner, more environmentally friendly steam production.



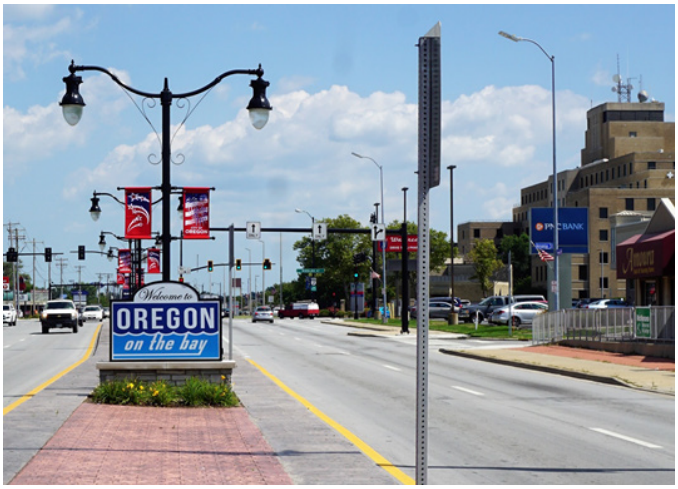
## **ms consultants |** Del-Co Water - Lawrence R. Schreiber Pump Station

The Upground Reservoir provides an adequate water supply for 1.5 million Central Ohio residents. Del-Co had the opportunity to access a new water-supply source from the O'Shaughnessy Reservoir, which is on the Scioto River. The project was split into two separate contracts: The Schreiber Pump Station and The Raw Waterline. The Schreiber Pump Station has a 16 million gallons per day (MGD) capacity and the intake system consists of 240 feet of 72-inch steel pipe installed via microtunneling into the center of the reservoir. It also has a 20-foot long and 6-foot wide intake screen with an underwater air-burst system to remove debris from the screen. The station uses two 385-HP, dry-pit submersible pumps to transfer 16 MGD to Del-Co's Olentangy Water Treatment Plant.

# *Honor Awards*

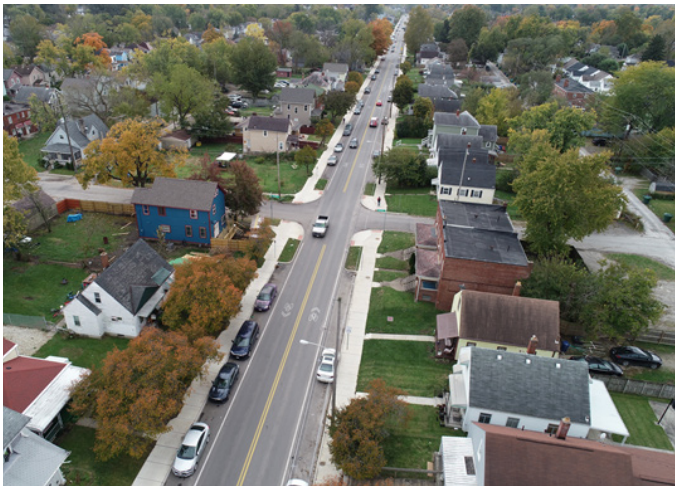
## **DGL Consulting Engineers |** Navarre Avenue/SR 2 Safety Improvements

The City of Oregon's Navarre Avenue/State Route 2 Safety Improvements have already had a major impact on the community. The improvements have reduced the number of crashes in the area by 40%. While the main project goal was to improve safety, there was also an opportunity to enrich the appearance of the area, thus creating a more welcoming entrance into the city. It was essential that aesthetics be systematically considered and appropriately applied to the planning, development, construction, and maintenance of this project, as well as future projects along the route. These aesthetic enhancements, as well as meeting the project safety goals, have been a significant value-add to the city and community.




## **Crawford, Murphy & Tilly, Inc. |** Hague Avenue Rehabilitation

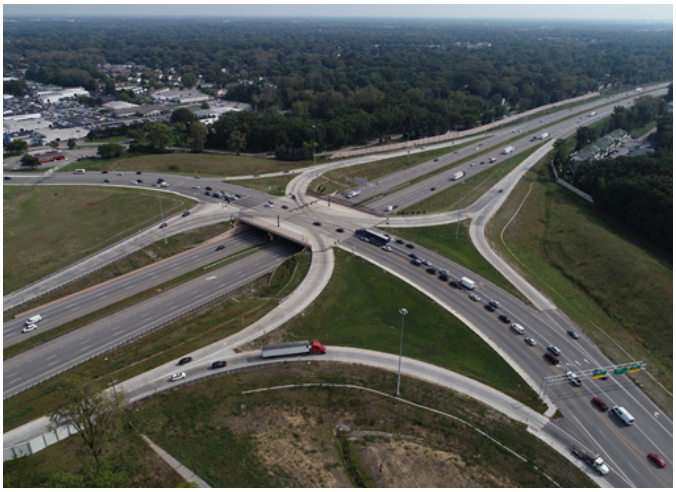
Hague Avenue between Broad Street and Sullivant Avenue is a five-block section of urban roadway running through a heavily residential neighborhood. CMT used the proposed roadway layout to implement a first-of-its-kind solution for the City of Columbus: a porous asphalt pavement, protected parking lane. The porous asphalt design offset the lack of surface inlets, improved water quality, promoted infiltration, and helped reduce construction costs. Use of porous asphalt to offset reconstruction of the storm sewer main maintained the existing budget, an estimated savings of $300,000 and nearly 10% of the project construction costs.



# *Honor Awards*

## **The Mannik & Smith Group |** I-475/US 23 & US 20 (Central Avenue) Interchange Reconstruction and I-475/US 23 System Interchange Realignment

Traffic volumes on the I-475 and US 23 corridors within the Toledo metropolitan area are projected to increase by 15 to 20 percent by 2035. The Ohio Department of Transportation is implementing a multi-phase plan to upgrade these corridors and identified the US 20 (Central Avenue) Interchange as a critical project. The Mannik & Smith Group designed a Single Point Urban Interchange which could be built on the existing right-of-way, minimizing property impacts. The newly constructed I-475/US 23 Central Avenue Interchange and the I-475/US 23 system interchange are now working together, moving traffic safely through the corridor.



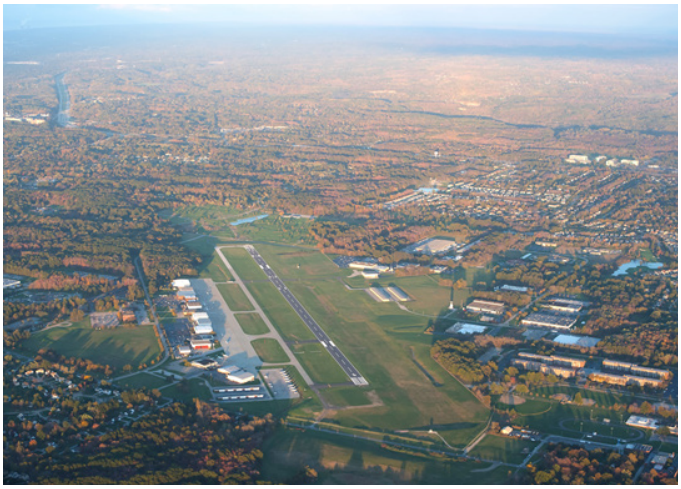
## **Environmental Design Group |** Camp Ledgewood Water Treatment System

Camp Ledgewood is located in Peninsula (Summit County), within the boundaries of the Cuyahoga Valley National Park. The Girl Scouts of Northeastern Ohio recently completed a master plan for one of their campgrounds, Camp Ledgewood. One of the critical infrastructure items that needed to be upgraded to support the Master Plan construction was the water system. As aging camp facilities were closed, activities were consolidated at Camp Ledgewood. With plans to add a multipurpose facility, including food service and additional cabins, Ohio EPA required a new wastewater treatment plant to handle future flows in the amount of 13,000 gallons per day.

# *Honor Awards*

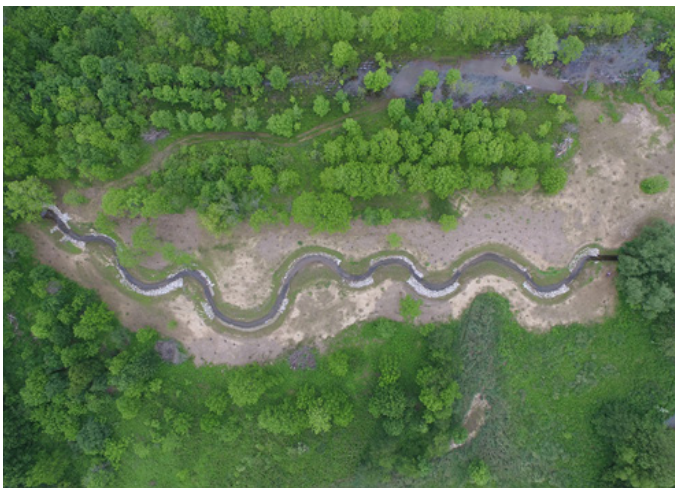
## **CHA Consulting, Inc. |** Runway 6/24 Safety Area Improvements

The Cuyahoga County Airport – Robert D. Shea Field (CGF) is a single runway airport that generates more than $185 million in economic impact and employs more than 400 people through aeronautical business at the airport. Before the Runway 6/24 Safety Area Program began, the runway was not compliant with current Federal Aviation Administration (FAA) design standards and the pavement condition was reaching a critical point of disrepair. As part of a general engineering contract for the program, CHA completed program definition, preliminary and final design, bid and awarded services, received Clean Water Act section 401/404 permitting, and coordinated with FAA. CHA also completed all construction services for the program with a full-time resident engineer, inspection services, quality assurance testing, and as-built survey.



## **Environmental Design Group |** Wilderness Center Stream Mitigation

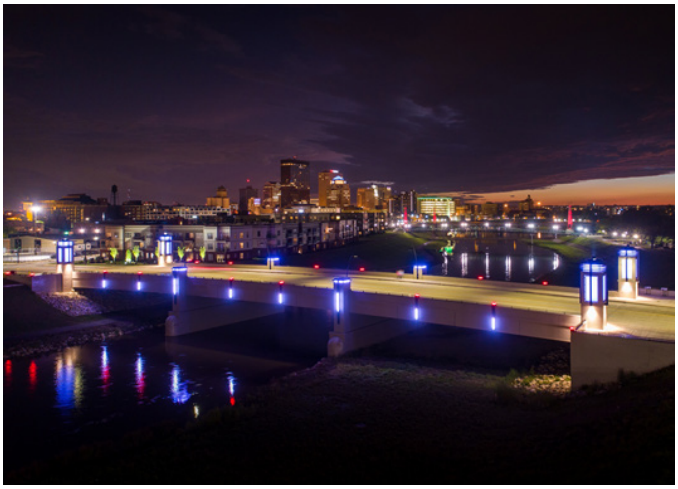
The Akron-Canton Airport's (CAK) plan for parking improvements resulted in an impact to approximately 200 feet of open drainage channel located between two existing storm sewers at a wilderness center. The Akron-Canton Airport selected Environmental Design Group to provide environmental, surveying, design, bidding, and construction services for permitting and mitigation associated with piping the existing channel. This allowed the Akron-Canton Airport to expand its parking to improve convenience for travelers and enhance the natural environment at the Wilderness Center.



# *Honor Awards*

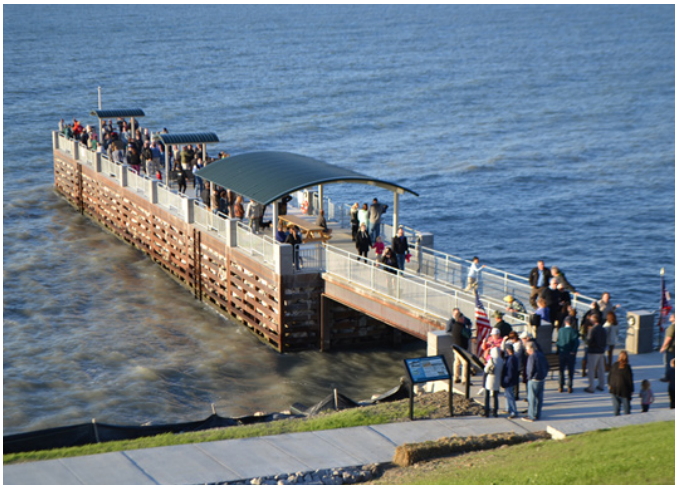
## **EMH&T |** Webster Street Bridge Replacement

The Webster Street Bridge over the Mad River in Downtown Dayton was a historic bridge originally constructed in 1916 and rehabilitated in 1960. The $10.1 million EMH&T-designed Webster Street replacement bridge is a unique structure that serves as a gateway into the Tech Town area and the Water Street District, which are experiencing positive change and growth. The new bridge incorporates innovative, yet cost-effective aesthetics into its design and serves as a gateway into these emerging areas. The tower beacons, railing, and piers feature 200 custom, color changing LED lights to help create a gateway effect and give new life to what was once a historically significant, yet functionally obsolete river crossing.



## **KS Associates, Inc. |** Painesville Township Park Pier and Improvements

Lake Metroparks is a premier recreational resource in northern Ohio with 38 diverse parks and 50 miles of trails throughout Lake County. Painesville Township Park includes more than 1,000 feet of Lake Erie shoreline along the bottom of a 55-foot high bluff. Over the years, the natural effects of wave action, groundwater, and gravity had eroded the bluff causing a severe sloping failure. KS Associates worked with the Lake Metroparks to develop and implement a plan to stabilize the shoreline, reduce the bluff erosion, and design a pier that would provide access to Lake Erie. Today, more than 3.5 million visitors enjoy Lake Metroparks each year, and visitors of all abilities now have another way to access and enjoy Lake Erie.



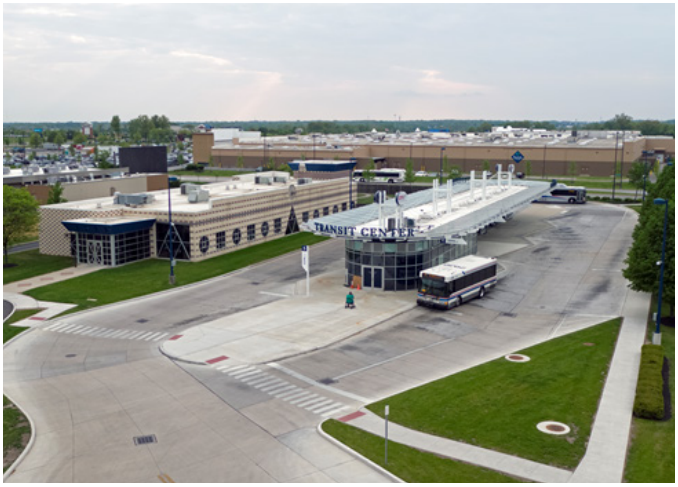
# *Honor Awards*

## **EMH&T** | National Veterans Memorial & Museum

The National Veterans Memorial & Museum sits on 53,000 square feet honoring all America's veterans. EMH&T served as the project's civil engineer, providing site and utility design. The project's most significant site design challenge was avoiding impacts to the Franklinton Floodwall, running along the Scioto River, while also raising the site grades by 13 feet. EMH&T's design solutions held back the land and kept the river at bay by allowing the floodwall to perform in the same manner as it was originally designed. The unique approach to solving the site's design issues not only met the wants and needs of the client while staying on budget and schedule, but also met the stipulation of United States Army Corps of Engineers (USACE) requirements.

## **TranSystems** | Easton Transit Center

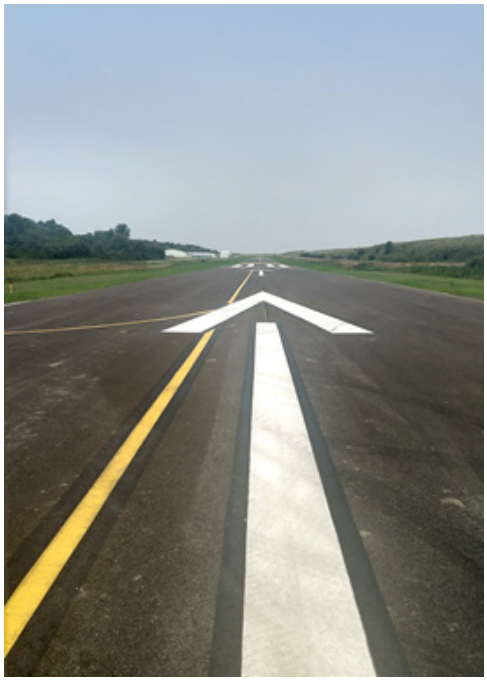
The Easton Transit Center and Park and Ride is a major hub for public transit in the Columbus area. As a result of the Central Ohio Transit Authority's Transit System Redesign, the number of bus routes serving the facility nearly doubled. To accommodate the increased service, TranSystems helped COTA expand the facility and upgrade systems. The work enhances safety and makes the facility easier to navigate, more comfortable for patrons, and provides real-time route information. To enhance the curb appeal, the site is heavily landscaped. All of this was accomplished in a sustainable and cost-effective manner.



# *Honor Awards*

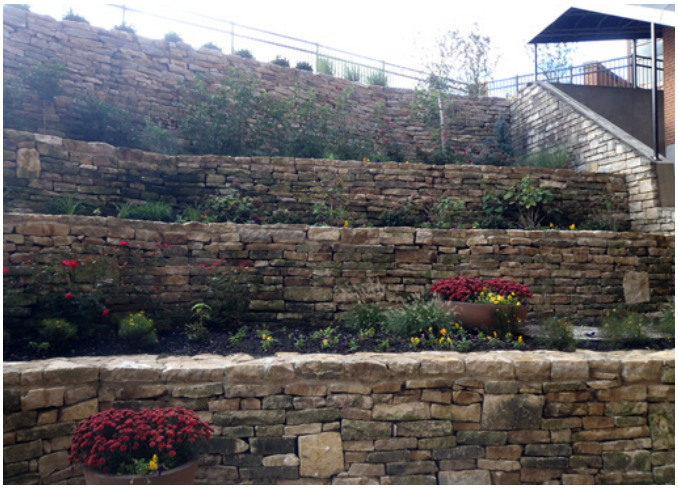
## **Michael Baker International |** Rehabilitate Runway and Runway Lighting 13-31

The Harrison County Airport Runway Rehabilitation project transformed a rural, 30-year-old runway into a modern and viable regional means of access. Michael Baker provided design and construction administration for the full reconstruction of runway 13-31 and 3 taxiway connectors, including replacement of all lighting with new LEDs. Originally built to support coal mining operations, the site's close-by shale deposits now offer a possible source of natural gas. With the rehabilitation of this runway, the airport can become an access point for shale exploration companies. The result is a safer, more attractive, and functionally ready runway to help drive economic growth.



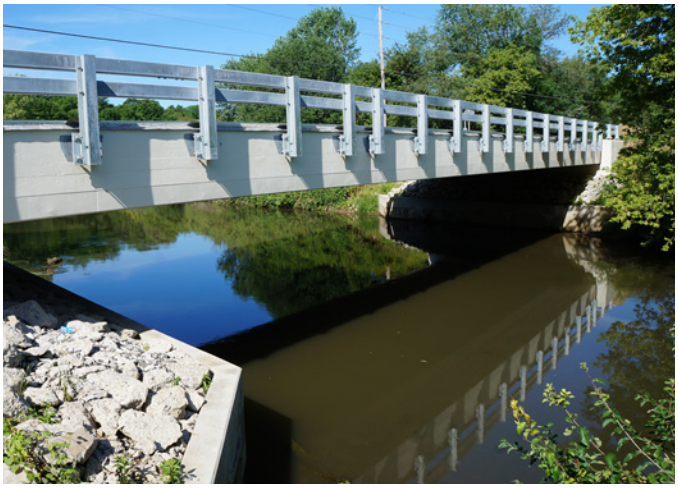
## **Pennoni / Sunesis Construction |** UH East Courtyard Retaining Wall

For more than 50 years, The Ohio State University Wexner Medical Center – University Hospital East has provided a place of solitude and reflection amidst the busy community hospital environment. Over time the seepage of groundwater into the four-tiered soft stone wall was causing failure. The team of Pennoni and Sunesis Construction solved the issue by using State of Ohio's Best Value Design-Build delivery method. Facing many challenges, the completed project offers a serene environment, once again creating an oasis for reflection and meditation in the midst of the hectic hospital setting.



## **Pennoni** | Vanderhoof Road Bridge over the Tuscarawas River

Pennoni provided design services to replace the existing bridge carrying Vanderhoof Road (CR 215) over the Tuscarawas River in New Franklin, Ohio. An inspection conducted in 2011 revealed the existing riveted steel girder bridge, built in 1929, needed replaced. Pennoni then completed emergency repairs to increase the structural capacity of the bridge to safely carry Ohio legal loads, thereby keeping the bridge in service while the replacement structure was designed. The replacement structure is a 100-foot-long, single span pre-stressed concrete box beam composite with a reinforced concrete deck. The span length eliminated the cost of removing the full height abutments and took advantage of them by using them for part of the cofferdam.



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2018 **DLZ Ohio, Inc**. – OARS-OSIS Augmentation & Relief Sewer Project

2017 **Stantec** – Scioto Greenways

2016 **AECOM** – University Medical Center New Orleans

2015 **HNTB Ohio, Inc.** – I-90 George V. Voinovich Innerbelt Bridge

2014 **URS Corporation** – Spaceport America Terminal & Hangar Facility

2013 **THP Limited, Inc.** – Central Riverfront Garage – Phase 2

2012 **ms consultants, inc.** – I-70/I-71 Columbus South Innerbelt Study

2011 **DLZ Ohio, Inc./HNTB/Spiro Pollalis** – Main Street Bridge Replacement

2010 **Wilbur Smith Associates** – Euclid Corridor Transportation Project

2009 **THP Limited Inc.** – The Ascent at Roebling's Bridge

2008 **FIGG** – Veterans' Glass City Skyway

2007 **HNTB Corporation** – Perry Street Bridge Replacement

**Karpinski Engineering** – Cleveland State University Recreation & Wellness Center

2006 **DLZ Ohio, Inc.** – River Chamber Stabilization & Demolition – Charleroi Locks & Dam

2005 **Lantz Jones Nebraska Inc.** – Knowlton Hall School of Architecture

2004 **Burgess & Niple, Inc.** – West Columbus Flood Protection Project

2003 **W. E. Monks & Co.** – Honda Transmission "Green" Building

2002 **Parsons Brinckerhoff Ohio, Inc.** – Fort Washington Way Reconstruction

2001 **Civil Design Associates, Inc.** – Atwood Lake Sewer System Phase I

2000 **Malcolm Pirnie, Inc.** – Aircraft Deicer Runoff Pilot Plant Treatability & Modeling Study

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