

in JEN ee um: Latin. Natural disposition of talents. Root word for "engineer"

Ingenium

SPRING 2019

A PUBLICATION OF EMH&T ENGINEERS, SURVEYORS, PLANNERS, SCIENTISTS

EMH&T

Assisting the Agency's Mission

Northeast Ohio Regional Sewer District

Placemaking

What is the Character of Your Town?

Big Walnut Trail

**Economic Benefits of
Piqua's New Roundabout**

Rose Run Park

First impressions.



"There are no second chances to make a first impression."

This quote, sometimes attributed to Oscar Wilde and sometimes to Roy Rogers, is dauntingly real. There really are no second chances, so do it right the first time!

Take, for example, working with a client for the very first time. In the greater Cleveland area, our team of engineers and environmental scientists approached our new client, Northeast Ohio Regional Sewer District, with every facet of our streambank stabilization project expertise, bearing in mind our work there would make an impression that will define our relationship for many years to come. That is no small statement. EMH&T prides itself on building long-term relationships—proving ourselves as responsive, reliable, and talented designers at every turn. Read about how we strived to make a great first impression on page 2.

When the City of Piqua, Ohio, opted for their first roundabout, the pressure to make a good first impression on the driving public in Piqua was intense. While working on the 40 plus roundabouts we have designed around Ohio, we have found that the trepidation felt by many communities as they consider installing their first roundabout is mainly attributed to a lack of familiarity. EMH&T's goal with Piqua was to help their roundabout make a great first impression by providing top-notch design backed by rendered visualization to help the City communicate the many safety benefits to the community. Read about the roundabout that opened this past fall on page 9.

Economic development directors and community relations professionals across the state will also tell you that making a good impression on potential new businesses and residents is the goal of every City. What, then, do your public spaces say about your community? That question is the focus of EMH&T's Director of Planning and Landscape Architecture Jim Dziatkowicz, PLA, ASLA. On page 6, read about how Jim and his team are dedicated to helping communities define themselves by employing the principles of "placemaking" to, indeed, make a "place" that captures the character of the town.

This is the first issue of the year. I hope that it makes a good first impression for 2019, followed by a year of good fortune for each of you!


Sandy Doyle-Ahern
President

Ingenium

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PROPOSED

Assisting in the Agency's Mission

Northeast Ohio Regional Sewer District Provides Environmental Leadership To Greater Cleveland

The summer of 1969 was eventful. Two major events caught the attention of the world that summer: Woodstock and the Apollo 11 moon landing where Neil Armstrong became the first man to walk on the moon! And here in Ohio there was the event that many believe triggered the modern environmental movement: Cleveland's Cuyahoga River caught fire when a slick of oily debris was ignited by a spark from an overhead rail car. The extensive local and national coverage of this event turned it into a symbol of environmental urgency.

Protection Agency (EPA), it also sparked (pun intended) the City of Cleveland to address the long-term problems associated with its wastewater management systems.

As a result, in April 1972, the Cuyahoga County Common Pleas Court ruled that, to best provide for the wastewater treatment needs of Greater Cleveland, steps should be taken to establish a regional sewer district. The Court issued an order instructing the Cuyahoga County Commissioners to file a petition for the creation of a regional sewer district and on June 15, 1972, the Court declared that the Cleveland Regional Sewer District was organized as a subdivision of the State of Ohio.

After several years of operation, the District wanted to distinguish itself from the City of Cleveland and pursued a "re-branding." The Court approved a name change, and in 1979, the Cleveland Regional Sewer District became the Northeast Ohio Regional Sewer District or NEORS D.

Today, NEORS D protects public health and the environment by leading effective wastewater and stormwater management. As the largest



EXISTING

This event not only prompted Congress to turn its attention to the environment with legislation such as the National Environmental Policy Act (NEPA) and the creation of the Environmental



“NEORSD has established a very thorough process of developing projects...Their process is layered with several peer review steps to ensure a high quality product, and their staff is very involved in the decisions that determine the best approach to the final design.”

Miles Hebert, PE, CFM, LEED Green Associate

wastewater treatment provider in the State of Ohio, the Sewer District spans 380 square miles, serves 62 communities with one million residents, and treats 90 billion gallons of wastewater a year.

EMH&T in Northeast Ohio

The firm’s business development efforts and recent project successes in northeast Ohio, combined with an increased awareness of EMH&T through our statewide ODOT contracts, such as the Environmental Task Force and the Statewide Safety Program, has opened new doors for the company in this part of Ohio.

Over the past few years, the firm has been rewarded with new projects in the northeast area of the state, mainly in Summit, Portage, Trumbull, and Mahoning counties. These include multiple projects at area universities, stormwater projects for the City of Stow, a major waterway improvement project in Akron’s Sand Run Metro Park, and design of a complex new roundabout in Mahoning County.

New Client, New Possibilities

Most recently, EMH&T expanded its presence by adding NEORSD to its growing northeast Ohio client list. NEORSD initially engaged EMH&T to provide professional services on a stormwater-specific Task Order Contract and then subsequently selected EMH&T for a General Ecological Services Contract. The stormwater contract has led to

task orders to complete the design of a stream stabilization project along Chippewa Creek in the City of Brecksville, Ohio. The environmental contract has led to numerous task orders related to fulfilling the District’s needs for environmental assessments, permitting assistance, and general environmental consulting services in support of the District’s Capital Improvement and Stormwater Programs.

“Because they (NEORSD) are a multi-jurisdictional entity that focuses on both stormwater management and watershed services throughout the area, they have developed Stormwater Master Plan (SWMP) studies that identify capital projects to address flooding, erosion, and other issues along the regional system with a particular focus on stream stabilization projects,” said Miles Hebert, PE, CFM, LEED Green Associate, EMH&T Director of Water Resources and the Project Manager under the stormwater task order contract.

The Chippewa Creek streambank stabilization project addresses watercourse erosion at two different locations within the City of Brecksville, where the erosion is threatening existing buildings and public infrastructure. Chippewa Creek is a fast-flowing waterway with a history of flooding after heavy rain events.

Like with any new client, there’s always a process of discovery where each side learns about the other and how they can work best together. With NEORSD, one of EMH&T’s significant discoveries was the agency’s approach to a project.

"NEORS D has established a very thorough process of developing projects," said Hebert. "It begins with a comprehensive pre-design stage to evaluate project alternatives and produce a schematic level of design for the recommended solution, including detailed cost estimates and determination of regulatory obligations. Their process is layered with several peer review steps to ensure a high quality product, and their staff is very involved in the decisions that determine the best approach to the final design."

"EMH&T's comprehensive understanding of streambank stabilization allowed us to anticipate and guide the project toward a 'best solution' that was right in line with the District's thoughts," he added.

The chosen streambank stabilization solution is a "hard" engineering design approach to protect existing infrastructure and reduce waterway impairments associated with on-going bank erosion. Both of the project areas will receive retaining walls along the failing sections of the streambank.

Once the final project solution was established, EMH&T's Adam Burger, PE, who is managing the firm's new Design Innovation Initiative, along with Dan Schneider, PLA, of the Planning and Landscape Architecture Division, created an animated fly-through video for each of the project's focus areas, as well as individual images at each location. According to Hebert, the video and images helped the client to communicate the proposed "best solution" to the impacted property owners and other project stakeholders, building support to implement the improvements.

Project Complexities Arise

As is the case with many projects, this one included its share of complexities. The project required a significant amount of coordination among many entities, including the Cleveland Water Department, Dominion Gas,

"EMH&T's comprehensive understanding of streambank stabilization allowed us to anticipate and guide the project toward a 'best solution' that was right in line with the District's thoughts."

Miles Hebert, PE, CFM, LEED Green Associate

The City of Brecksville, and property owners impacted by the proposed improvements - the Chippewa Creek Condominiums condo association and the Millside Centre Shops & Restaurants shopping center owner.

Additionally, one of the two project sites abuts ODOT right-of-way at a bridge on State Route 21 (Brecksville Road) that crosses Chippewa Creek. This situation adds a layer of complexity to the project, requiring inter-agency coordination. The project team's ODOT experience and positive relationships within ODOT District 12 have proven beneficial to the project and to NEORS D.

Solutions Achieved

With the design solution finalized, the project has moved forward and is now in the 50% design stage. Once this design level is complete the process will again move into review meetings with NEORS D staff. This process will repeat through 90% design, followed by another round of reviews with NEORS D and then wrap up with the project bidding for construction in early 2020.

According to Hebert, a major driver of the project's success so far has been the multi-disciplinary team that was assembled for the project.

"We are working closely with several outstanding northeast Ohio firms that are providing geotechnical engineering, field and boundary surveying services, and general engineering services. Each of these firms was already well

established with NEORS D, having previously worked with them, as well as with many of the local municipalities," said Hebert.

Another aspect of the project's success is NEORS D's approach. Throughout the course of the project, the District has taken a hands-on role in the design process.

"They are very organized and deliberate in their approach and their process, which helps ensure the resulting deliverable is completely in-line with their expectations," said Hebert.

More Successful Projects Anticipated

As the Chippewa Creek Bank Stabilization project completes its final design stages and moves toward the bidding process, Hebert sees it as a successful project to date.

"We provided NEORS D with potential solutions with varying costs and levels of feasibility, and, in the end, we all landed on the same page when it came to the best solution for the Chippewa Creek projects. We are hopeful for future opportunities to demonstrate our project team's ability to successfully collaborate with the District on similar projects," said Hebert.

To learn more about EMH&T's Water Resources Engineering expertise or to discuss a potential project, contact Miles Hebert, PE, CFM, LEED Green Associate, at (614) 775-4205 or mhebert@emht.com.



PROPOSED

The Chippewa Creek streambank stabilization project addresses watercourse erosion at two different locations within the City of Brecksville, where the erosion is threatening existing buildings and public infrastructure. Chippewa Creek is a fast-flowing waterway with a history of flooding after heavy rain events.

The image of proposed improvements on page 2 is located at the Millside Centre Shops and Restaurants in Brecksville, Ohio, where a decorative retaining wall would protect threatened buildings. The image on the bottom of page 2 depicts the erosion caused by Chippewa Creek. Above, the proposed image depicts a retaining wall that would not only protect Chippewa Creek Condos but provide a grass lawn for residents.



EXISTING

PLACEMAKING

What is the character of your town?



"I want to talk to every community I can about our focus on placemaking. I think it has an amazing impact on the character of any community."

**Jim Dziatkowicz, PLA, ASLA
Director of Planning and
Landscape Architecture**

When you think about your community as a whole, what space comes to mind? Is there a park or a gazebo in the center of town? Maybe you think of your "main street" and the location of your town's annual festival. What "place" defines your community?

"Placemaking" is the art of inspiring people to collectively re-imagine and reinvent public spaces as the heart of every community. Strengthening the connection between people and the places they share, placemaking refers to a collaborative process by which we can shape our public realm in order to maximize shared value. More than just promoting better urban design, placemaking facilitates creative patterns of use, paying particular attention to the physical, cultural, and social identities that define a place and support its ongoing evolution.

The *Project for Public Spaces (PPS)* defines most great places, whether a grand downtown plaza or humble neighborhood park, through four key attributes:

1. They are accessible and well connected to other important places in the area.
2. They are comfortable and project a good image.
3. They attract people to participate in activities there.
4. They are sociable environments in which people want to gather and visit again and again.

EMH&T's Planning and Landscape Architecture Studio has helped many communities with their placemaking projects, and delivers every size project from large-scale land use plans to streetscape designs, to pocket park strategies.



“Our Studio is known for detailed and creative landscape design and planting plans and code compliance,” said landscape architect, Jim Dziatkowicz, PLA, ASLA, EMH&T’s Director of Planning and Landscape Architecture. “I also want to talk to every community I can about our focus on placemaking. I think it has an amazing impact on the character of any community.”

“When we are asked to design a streetscape, there’s a place between the curb and the building that really gets our creative juices flowing,” said Dziatkowicz (pronounced JAK-o-witz). “We focus on how people move through a space, how you feel, and what you experience. We look at sidewalk cafés or easy move-through corridors, but most importantly, we look at what the character of the place is now and what the communities want it to be. That’s what I want this Studio to be known for: making places.”

The Studio is backed by a strong portfolio of projects in the areas of parks and recreation, streetscapes, planning and urban design, green infrastructure, and development-based landscape architecture. They also provide cutting-edge professional 3D visualization and other forms of graphic communications.

Dziatkowicz brings 26 years of local and global experience on a variety of projects including community master planning, park planning and design, theme park planning and design, site development concepts, and urban design.

“We have resources and talent at EMH&T that make the Studio’s product better,” said Dziatkowicz. “When teamed with other disciplines, we bring the artistic flare that can make a project a ‘place.’”



The City of Whitehall, Ohio, rebranded and installed gateway features designed by EMH&T to increase its “sense of arrival.”

"We are most excited to engage with more communities across the Midwest and Southeast regions to bring comprehensive placemaking to help refresh local spaces," said Dziatkowicz.

In many cases, EMH&T is already a "go-to" civil engineering firm, so spreading the word on the magnitude of landscape architecture talent under that same roof is a priority.

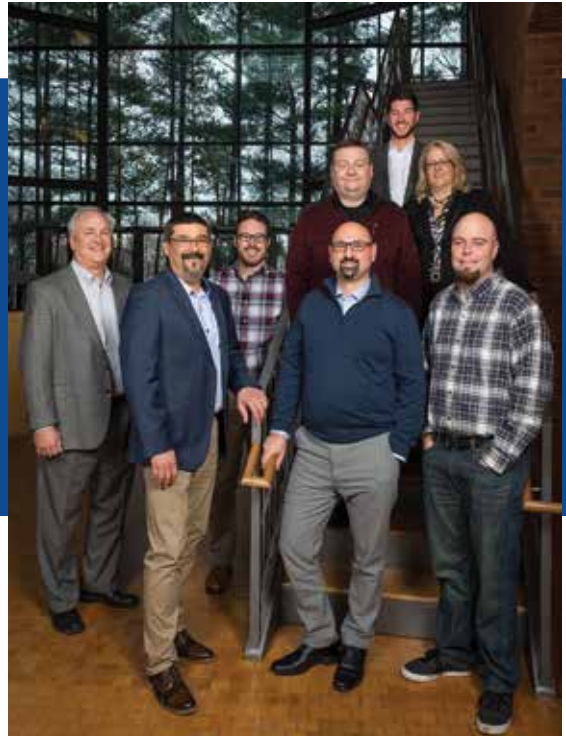
"The Studio's team adds a layer of creativity to any project, so we welcome collaboration with our internal and external clients," he said.

Dziatkowicz wants to leave a legacy of placemaking. "After 10 years, I want to look back and say, we made a difference, we left these places better than we found them." ■

For more information about the Planning and Landscape Architecture Studio, contact Jim Dziatkowicz at (614) 775-4703 or his email of jdziatkowicz@emht.com.



EMH&T uses advanced rendering software to transform concept ideas into visualization aids for our clients. Above is an early concept images for a town center park in Marion, Ohio.



EMH&T's Planning and Landscape Architecture team L-R: Vice President Jeff Strung, Division Director Jim Dziatkowicz, Andy Filcik, Franco Manno, Shawn O'Hara, (back) Dan Schneider, Linda Menerey, and Justin Maxwell.



Road reconstruction projects present opportunities for placemaking, as well as safety installations and green infrastructure elements.

ROUNABOUT BRINGS NEW ECONOMIC OPPORTUNITIES

Piqua's Looney and Garbry Roads Intersection

We all know there's a first time for everything, and that includes a community's first roundabout. As communities of all sizes are faced with population growth and new residential and commercial development, they are also faced with the task of improving traffic flow and safety. Roundabouts can be a great solution for both. For the City of Piqua, Ohio, their first roundabout replaced a stop-controlled 4-way intersection at Looney and Garbry roads and not only improved traffic flow and safety at an increasingly busy intersection, but also helped position the area to handle anticipated future growth.

Public Information Helps Bring Success

While roundabouts continue to appear throughout the region and the state, they can also be polarizing in some communities. Because of this, the public

involvement and education process is vital to the successful implementation of a roundabout project.

Unfamiliarity and uncertainty generally drive the objections over roundabouts. Perceived cost and right-of-way impacts are two typical areas of concern on some projects. EMH&T's professionals work closely with clients to develop the public involvement strategy, messaging, and graphic materials designed specifically to communicate the design of a proposed roundabout, as well as its benefits. For Piqua, EMH&T project managers Mike Brehm, PE, and Abby Cueva, PE, attended public meetings along with City officials to discuss the key elements of the roundabout's design, present graphic renderings of the project, and answer questions from the public.

According to City of Piqua Engineer Amy Havenar, PE, EMH&T's participation in the public involvement effort was extremely helpful and integral to the project's success.

"I was amazed at how smoothly the public meetings went and I credit EMH&T's involvement for their supporting role in helping our citizens understand both the benefits of a roundabout and future traffic pattern changes. The technical expertise of the staff at EMH&T was proven when few, if any, comments came back from ODOT on their plans," she added.

The City followed up after the public meeting with fliers and social media posts to its citizens focused on the roundabout design and its advantages and improved safety aspects, as well as information on the proper way to navigate through a modern roundabout.

EMH&T's Experienced Design Team

The key to communicating the benefits of a roundabout design for an intersection is to focus on the proven safety benefits—an element typically well received by the community. EMH&T has designed over 40 roundabouts across many

communities; each offering a safety benefit compared to other intersection types. Technically, traditional four-leg intersections have 32 potential points of conflict for possible crashes, while single lane roundabouts have eight potential points of conflict. According to the Insurance Institute for Highway Safety, statistically there is on average a 40% decrease in all accidents and a 90% drop in fatalities when a traffic intersection is replaced by a roundabout.

According to Brehm, a Senior Project Manager in EMH&T's Transportation Division, one of the main reasons to use a roundabout is safety.

"Roundabouts tend to improve safety by encouraging slower speeds while also reducing the number and severity of conflict points," said Brehm. "Also,

because traffic is moving at slower speeds, the potential for injury accidents is greatly reduced," he added.

EMH&T has been perfecting the design of roundabouts for many years now. In fact, the first modern roundabout open to traffic in the City of Columbus was designed by EMH&T, as were the first or second roundabout for many other communities in Ohio. Some of them are simple, single-lane roundabouts, like the Fodor Road Roundabout, Columbus' first, and others are slightly more complex, like the 5-Points Roundabout in Mahoning County, Ohio, which will transform a 5-leg all way stop controlled intersection into a 5-legged roundabout designed to provide a long-term solution focused on improving safety and operations.

Value of a Roundabout






As new developments and the roadway infrastructure to service them continue to increase in the U.S., roundabouts will become more commonplace. There are currently close to 5,000 modern roundabouts operating in the U.S. that were constructed since 1990 and hundreds more are constructed every year.

For the City of Piqua, and for all of our clients, EMH&T professionals work with the local agency to determine if a roundabout is indeed the best solution. Sometimes, a roundabout is not viable.

"We use our judgment in these situations," said Brehm. "If we believe a roundabout is a viable option for the project, we suggest that it be considered," he said,

Yield Left. Go Right. Providing clean graphics with clear text to the driving public helps pave the way for acceptance of a new roundabout. Couple that with the exceptional safety record of a roundabout, and the table is set for a satisfied public and additional installations.

SINGLE LANE ROUNDABOUT

-  **SLOW AT THE SIGN.** Notice the "roundabout ahead" sign and slow your speed on approach.
-  **WATCH FOR PEDESTRIANS.** Look for pedestrians and bicyclists in crosswalks.
-  **YIELD LEFT, GO RIGHT.** Watch for traffic already in the roundabout and YIELD. Enter circling right  when there is a gap in traffic.
-  **EXIT WHERE YOU WANT TO GO.** Continue right around the roundabout until you exit in the direction you want to go.

WHILE IN THE ROUNDABOUT, YOU HAVE THE RIGHT-OF-WAY.

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"and provide our client the information needed to make an informed decision."

The intersection that the Looney-Garbry Roundabout replaced was identified as an unsafe intersection by the Miami Valley Regional Planning Commission, which made it eligible for state funding. Additionally, Piqua chose this location for their first roundabout because it could be easily bypassed by using other surrounding routes.

"Locating the roundabout at this particular intersection lets local drivers ease into its use since they can take an alternate route and are not forced into using the roundabout," said Brehm.

Designed for today but expandable for tomorrow


The roundabout was completed in the fall of 2018 and is now in full operation. Beginning with the preliminary engineering study, EMH&T developed alternatives to advance a preferred alternative that balancing intersection geometry and operations while addressing future development needs adjacent to the project location, including an improved intersection level of service.

The roundabout is small with a single circulating lane and a truck apron, but is also designed for school buses to navigate it without using the truck apron. The design also incorporates appropriate street lighting and a shared-use path around the roundabout for pedestrians and for bicyclists who do not want to cycle through the roundabout itself.

While the roundabout's current configuration is a single lane, it is designed to be easily expanded to a two-by-one configuration in the future, based on the need and demand as this area of Piqua continues to grow.

A Catalyst for Economic Development

The likelihood of continued expansion in this area is high. The City has over



"In addition to providing an attractive gateway, the roundabout improvements enhance the ease of access to the surrounding land and make available development opportunities much more appealing."

**Chris Schmiesing
City of Piqua**

300 acres of developable land near the roundabout (mostly south) and this land has great I-75 freeway frontage.

According to Chris Schmiesing, the City of Piqua's Community and Economic Development Director, the City views this area as a growth opportunity, however the problem has always been difficult access. The addition of the roundabout at this intersection was a key part of the solution to this problem.

"We fully expect the installation of the roundabout at this location will improve the flow of traffic and the safety of motorist, bicyclist, and pedestrians traveling through this intersection," said Schmiesing.

The new Looney-Garbry Roundabout provides a gateway—for both traffic access and from an aesthetic perspective. It sends a signal to the greater development community that the City is serious about continued development in this area, according to Schmiesing.

The development community has taken notice, with new activity/interest already occurring near the roundabout, including a potential medical office site in the southwest quadrant.

"In addition to providing an attractive gateway, the roundabout improvements enhance the ease of access to the surrounding land and make available development opportunities much more appealing," added Schmiesing.

The City of Piqua continues to market the area to the development community and the roundabout is at the forefront of that marketing effort. The chances of additional successful development are pretty certain. ■

If you'd like to learn how EMH&T can help you to develop your first roundabout, contact Mike Brehm, PE, at (614) 775-4616, mbrehm@emht.com; Abby Cueva at (614) 775-4604, acueva@emht.com; or EMH&T roundabout expert Jason Smallwood, PE, at (614) 775-4645, jsmallwood@emht.com.

BIG WALNUT TRAIL SECTION 4

EMH&T Brings Solutions to an Easy-Turned-Complex Project

Things aren't always as simple as they seem to be. Take for instance Section 4 of Central Ohio's Big Walnut Trail running through Gahanna. EMH&T designed this newest section of trail to provide an enhanced pedestrian connection in support of the larger Big Walnut Trail system. While design of this 6,700-foot addition to the trail seemed simple enough, the project

went from simple to complex in the blink of an eye once design work began.

Big Walnut Trail is just one of the trails in the multi-jurisdictional Central Ohio "Green Belt Network." From Hoover Reservoir at its north end to Elk Run Park to the south, the developing Big Walnut Trail follows its namesake creek through Columbus and its eastern suburbs of Westerville, Gahanna, and Whitehall.

The six "Green Belts" now under development are a network of over 92 miles of trails winding throughout the urban fabric of the City that will ultimately form a system of interconnected loops in Central Ohio. Ranging from four to 32 miles long, these greenways will offer new ways to experience great parks, neighborhoods, culture, and some of the best scenery in the City.

From Simple to Complex in the Blink of an Eye

During design of the trail, EMH&T engineers established the path alignment to provide scenic views through local neighborhoods, existing City park property, and a new conservation easement granted by Stony Brook United Methodist Church (UMC). The easement, which was established in conjunction with a stream



restoration project on McKenna Creek, provided a critical link enabling the path to cross over the Big Walnut Creek and connect to the Lower McCorkle Park system and the City's municipal golf course.

The trail project was funded in part by the Clean Ohio Trails Fund, and the stream restoration was funded in part by the Clean Ohio Conservation Fund. EMH&T assisted the City of Gahanna

in securing the Clean Ohio Conservation Fund grant, and provided grant administration assistance throughout the project. So while transportation engineers were working on the trail and bridge designs, the water resources engineers and environmental scientists were busy with the hydraulic modeling, stream restoration and conservation efforts. As these groups worked in tandem and the trail's design and location solidified, it

became apparent that this simple trail project was quickly becoming complex.

"Once the environmental footprint was determined with a clear delineation of existing wetlands, the results turned our linear shared use trail project into a multi-faceted project that became driven by the water resources and environmental solutions," said EMH&T Project Manager Neil Schwartz, PE.

Water Resources and Environmental Services Take the Lead

While the focus of the project was both the trail extension and the water crossings, environmental and water resources work were the true project drivers. The stream restoration along McKenna Creek, coupled with the trail crossing over Big Walnut Creek, required significant work from these two EMH&T divisions.

The stream restoration along a segment of McKenna Creek, a small tributary to Big Walnut Creek, involved the removal of a low-head dam and a shallow, online pond.

According to EMH&T Senior Environmental Scientist Heather Dardinger, MS, the pond dated back to

the 1960s and originally served as a fishing pond for the former Fraternal Order of Police lodge, which was previously located on the property. The stream restoration removed the low-head dam and restored a natural free flowing channel. The removal of the dam and pond then allowed the trail to traverse the property toward its crossing over Big Walnut Creek.

"Removal of the dam was necessary to both the stream restoration and to the path design," said Dardinger. "Just days before the contractor was to begin demolition, it experienced a pretty major failure with a large chunk of the dam breaking off, allowing the pond area behind it to begin draining."

"As part of the stream restoration, we determined the best course for the channel in relation to the new trail, and designed a small streamside wetland to provide habitat and aesthetic interest. The new creek bed incorporates several sections of riffles and pools as it descends toward its confluence with Big Walnut Creek," said Dardinger.

Another feature incorporated into the new stream is toe-wood (also known as root wads). This design approach

“EMH&T knew exactly how to manage this project by asking the right questions, coordinating with each entity, and then by communicating regularly with the City. I could not have asked for a better outcome!”

**Robert Priestas, PE
City of Gahanna**



is achieved by burying trees into the earth along the streambank with the roots protruding from the bank and into the stream channel. This use of a natural material creates an organic way to provide needed streambank stabilization while also improving fish habitat within the channel due to the shade and cover the tree roots provide.

“Our use of toe-wood in this project is another key component in the re-

naturalization and restoration of this stream channel,” said Dardinger.

Impacts to wetlands around the fringes of the pond required mitigation, which was achieved by preserving a significant area of Category 3 wetlands located on the City’s property immediately west of Big Walnut Creek. EMH&T’s Environmental, Water Resources, and Transportation divisions worked hand in hand to ensure that the trail crossing spanned this high

quality resource and that care was taken in the design plans to avoid any indirect impacts from the trail construction.

Trail Alignment Rests on Pedestrian Bridges

With the environmental components set, the project’s focus turned again to the trail itself, as well as the three stream crossings it required. The two significant crossings were over Big Walnut Creek and over the restored section of McKenna Creek, with a third crossing occurring elsewhere along the new section of path.

The trail design was simple enough at its northern section and along its length to the stream restoration area. Except for a crossing over Cherry Bottom Road, the path simply follows the length of this scenic, curvy urban roadway. However, once the design reached the stream restoration area and Big Walnut Creek, things got a bit complicated again.

As the transportation design team began looking at the path location, as well as the locations and connection of the two new bridges, the project once again became

Trees are planted liberally along the streambank to provide increased stabilization. Toe-wood is used as an organic way to provide additional streambank stabilization while also improving fish habitat within the channel due to the shade and cover the tree roots provide.



heavily dependent on EMH&T's Water Resources and Environmental divisions.

"As these details of the design were coming together, we began to see the impact of the McKenna Creek stream restoration on this section of the trail and particularly on the two new bridges," said Schwartz. "As design of the bridge structures progressed, it became necessary to again engage our water resources engineers to provide water elevation modeling."

The floodplain permitting required a study on the increase in flood elevation caused by the new bridge over Big Walnut Creek. The Transportation and Water Resources divisions worked in tandem on several design options to mitigate the flood elevation issue, but it was unavoidable. The project ultimately required a Conditional Letter of Map Revision (CLOMR) from FEMA for the increase in flood elevation within in the floodplain and floodway of Big Walnut Creek.

The crossing over Big Walnut Creek also required temporary fill impacts to wetlands and the stream in order to construct the bridge, prompting U.S. Army Corps of Engineers permitting and a mussel survey of Big Walnut Creek. Nearly 500 live mussels representing 15 species were identified during the survey, including two state-listed species of concern.

Another significant challenge of the Big Walnut Creek crossing ended up being the dirt. The soil conditions impacted several aspects of the path design.



Since the trail plans included a new street crossing, EMH&T developed a series of computer-generated renderings to help City officials visualize the installed improvements.

"We encountered several geotechnical engineering challenges due to the poor soil conditions in the area, requiring an extensive soil stabilization plan to minimize settlement at the bridge approaches," said Schwartz.

Multi-Disciplinary Approach Results in Success

Leveraging the full in-house leadership of EMH&T, the project goals for this section of the Big Walnut Trail were achieved. Extensive coordination across multiple practice areas was required to complete the project. EMH&T's environmental, water resources, and transportation teams worked together seamlessly to deliver the project on-time and within budget.

According to Rob Priestas, PE, Director of Public Service & Engineering for the City of Gahanna, this was one of the City's most complex "simple" path projects.

"This simple trail extension project was likely the most complicated shared-use path project we have ever experienced," said Priestas. "It was a challenge with so many moving parts—multiple funding sources, stream impacts, FEMA permitting, environmentally sensitive resources, in-stream mussel relocations, coordination with private property owners, and geotechnical challenges. EMH&T knew exactly how to manage this project by asking the right questions, coordinating with each entity, and then by communicating regularly with the City. I could not have asked for a better outcome!" he concluded. ■

To learn more about EMH&T's trail design experience and multi-disciplinary approach, contact Project Manager Neil Schwartz, PE, at (614) 775-4600, nschwartz@emht.com; or Heather Dardinger, MS, Senior Environmental Scientist, at (614) 775-4523, hdardinger@emht.com.

ROSE RUN

Commitment To Connectivity, Community, and the Environment

Once considered a small “country town” just outside of Columbus, Ohio, the now bustling community of New Albany resides atop “best suburb” lists compiled by various nationwide newspapers and magazines.

A remaining vestige of the country town’s roots was a portion of Dublin Granville Road, just west of Interstate 62 and south of State Route 161. In order to change the character of the corridor, the road is undergoing a massive transformation from rural highway to Rose Run Park, characterized by an elegant urban streetscape and park.

Rose Run is planned to provide the community a “Central Park” like setting by re-visioning Dublin Granville Road and enhancing the Rose Run stream, which runs along the project corridor, while also connecting New Albany’s learning campus with its vibrant town center.

“Dublin Granville Road was a 55 mph rural highway,” said Adrienne Joly, Director of Administrative Services with the City of New Albany. “As the town’s center has developed with greater density of activity, the characterization of the highway made less and less sense for its surroundings, and for the safety of users—especially bicyclists and pedestrians.”

Traffic will be reduced to two lanes with new crosswalks and bike lanes to improve pedestrian safety, and the speed limit will be lowered to make the corridor conducive to an urban feel. The area will host New Albany’s first interactive play area for children, as well as an outdoor event lawn behind the library, and leisure trails with quiet scenic spots to explore and play. Included is a formal promenade, new crosswalks with decorative granite pavers, and permanent infrastructure which facilitates the use of the new spaces for outdoor community and private events.



Rendering courtesy of MKSK.

As part of the streetscape, with close proximity to the New Albany-Plain Local K-12 school campus, the project team ensured the design provides safe and accessible ways to cross Dublin Granville Road. A pedestrian bridge carefully composed of decorative brick and iron railings completes the inviting path from the roadway across the creek, which also connects the learning campus to the amenities in the town center.

The new corridor provides convenient paths for vehicular, pedestrian, and bicycle traffic circulation between the school campus, the Jeanne B. McCoy Community Center, a local library branch, the Market Square mixed-use retail and offices, and the community's fitness hub, The Philip Heit Center for Healthy New Albany.

Another aspect of this corridor is the park's namesake, Rose Run stream. "Early on in study and planning phases the stream started to emerge

as a defining link between different components of the City's core," said Joly. "Having not been maintained for years, it became New Albany's desire to preserve and enhance Rose Run as a natural resource within a park like setting."

"One of the largest challenges to the transformation of the rural road to urban park was burying the existing overhead utilities," said EMH&T Project Manager Todd Cunningham, PE. "In addition to typical OUPS markings for underground utilities, we worked really hard to verify locations and account for inconsistencies. It is always a challenge, but we are known for proactively working with private utility companies to identify their infrastructure within a project's work limits and coordinating relocations (if necessary) to facilitate new construction...in this case, for Rose Run."



“Rose Run Park is truly a defining project. It will honor the history of the area, while centralizing the community around this beautiful park, making it the physical, visual, and emotional heart of New Albany”.

**Adrienne Joly
City of New Albany**

The park will also be home to the first half-mile section of the community’s “velo loop,” a two-way bicycle-only five mile track loop planned to run along existing and future road corridors, ultimately connecting New Albany to other bike trails in surrounding communities.

As a popular cycling destination in Central Ohio, the City’s intent is to connect—almost as a “hub”—to other regional trails including the Ohio Erie Trail, Alum Creek Trail, and the Big Walnut Trail. As a central connector for other communities, Rose Run Park will provide a gateway to beautiful new scenic routes for cyclists.

“When completed, Rose Run Park will enhance economic development in the Town Center,” said Cunningham. “This project establishes a solid base

for the planned extension of Rose Run Park and economic development east of State Route 62.”

The park is being constructed by Messer Construction under a Construction Management at Risk (CMR) contract. This method of project delivery was selected because it allowed the City to hire the construction manager early in the process to facilitate collaboration with the EMH&T/ MKSK design team to ensure delivery of a quality project within the established budget.

Under CMR delivery, the contractor provides cost modeling as design progresses, which allows the team to make informed decisions about all aspects of the project. When design sufficiently completes, the CMR provides a Guaranteed Maximum Price (GMP), which gives cost certainty to New Albany. Additional advantages of the CMR delivery method include the CMR assuming the role of a construction consultant, and assisting with value engineering, cost estimating, and constructability reviews.

“Rose Run Park is truly a defining project,” said Joly. “It will honor the history of the area, while centralizing the community around this beautiful park, making it the physical, visual, and emotional heart of New Albany”. ■

If you would like more information on this project, contact Todd Cunningham at (614) 775-4350 or tcunningham@emht.com.

Shorts



Blacklick Creek Sanitary Interceptor Sewer Breakthrough

This past fall, the City of Columbus, the design team, contractors, and construction management team celebrated the breakthrough of the tunnel-boring machine at the terminus of the 4.5-mile tunnel that is the Blacklick Creek Sanitary Sewer Interceptor. The 120-inch diameter sewer will serve approximately 20,000 acres in the Blacklick sewershed, plus an additional area from the Rocky Fork Creek Basin. Pictured in front of the tunnel boring machine 150 feet below the surface are (L-R) Mike Keller, Josh Meyer, Steve Geiger, Sandy Doyle-Ahern, and Michael Garnes.

Two EMH&T Projects Honored with ACEC-Ohio Excellence in Engineering Awards

This annual competition recognizes projects throughout the state of Ohio which exhibit a high degree of innovation, complexity, achievement and value.



The new **National Veterans Memorial and Museum** project has been in the public eye since it was announced and has been hailed by industry publications as one of the nine most beautiful buildings opened in 2018. The uniqueness of the building is enhanced by the beauty of the project site, which is protected from major flooding by EMH&T's innovative engineering approach.



The EMH&T-designed **Webster Street Bridge** incorporates innovative, yet cost-effective aesthetics and serves as a gateway into emerging areas of Downtown Dayton. The complex ODOT LPA project required the expertise and experience of almost every EMH&T division, including Survey, Environmental, Cultural Resources, Transportation, and Traffic divisions.



OSIS-OARS Project Named ASCE OCEA Award Finalist

The City of Columbus OSIS Augmentation and Relief Sewer (OARS) project was selected by the American Society of Civil Engineers as one of five finalists for the association's 2019 Outstanding Civil Engineering Achievement award. The project already received several awards, including the 2018 ACEC Ohio Engineering Excellence Grand Award, the 2018 ACEC National Engineering Excellence Grand Award, and an ENR Midwest Award of Merit as a 2018 Best Project. The project, along with the four other finalists, was honored at ASCE's annual gala in March. While it was not selected as the ultimate winner, the project was still recognized for the extensive engineering excellence it involved. Under the direction of lead firm DLZ, EMH&T provided the team with engineering support for access shaft site plans and design, hydraulic modeling for the tunnel design, and improvements to both sanitary and storm sewers in Columbus Berliner Park and the Greenlawn Avenue area. EMH&T also provided survey, easement descriptions, environmental services, PTI acquisition, and maintenance of traffic for the entire deep tunnel project. At project completion, EMH&T provided final site restoration and site improvements for the downtown receiving/construction area to restore the site to a completed condition, including a new parking lot and landscaping.

Shorts

Giving Back

EMH&T has long valued its commitment to give back to the communities where we live and work. The firm offers employees paid time off so they can participate in a wide variety of charitable efforts. Working as individuals on personal passions to division staff working together on a group project, philanthropic endeavors are held in high esteem at EMH&T. Here's a brief look at how some of our staff have been giving back.



Members of EMH&T's Transportation and Human Resources divisions went to the Ronald McDonald House Columbus and prepared and served lunch to resident families of Nationwide Children's Hospital. Back Row L-R: Tyler Adams, Grant Wasielweski, Ed Kagel, Brian McCutchen, Matt Scheer, Adam Burger, Mark Donnelly; Front Row L-R: Cara Tamaro, Brenda Cimino, Mike Brehm, Josh Ginnetti, Chef Blair, Mark Rahall, and Robert Hoops.

LifePump Update

For 250 villagers in Guichard, Haiti, the struggle against water insecurity ended thanks to Chelsea Hager and EMH&T. Last year, Chelsea spearheaded the effort to raise at least \$10,000 to buy an innovative LifePump water pump for this village. Employees at EMH&T helped by donating to the cause and the company matched all donations to reach the goal. The LifePump arrived safely with Design Outreach's partner, *Water for Life*, located in Les Cayes in southern Haiti. In recent months Outreach installed the LifePump at a depth of 57.9 meters (190 feet) switching the community from the open spring water source to pumped water.



A group from the Development 1 Division recently worked at the Heart of Ohio Family Health Center. The team worked at the community garden assembling two picnic tables, a wheelbarrow, compost bins; and, they mended a portion of fence and cleaned debris from the raised beds and pathways. Back Row L-R: David Ike and Bashir Gardaad with Heart of Ohio Family Health Center, Brian Prenger, Jay Milligan, Kyle Harmon, Tracy Foltz. Front Row L-R: Matt Fleshman, Ryan Davis, Sarah Massella, Sydney Berry, Linda Vanover, Kristen Corder.

People In The News

EMH&T Director of Land Survey Ed Miller receives Governor Appointment



E. Miller

Ed Miller, PS, EMH&T's Director of Land Survey, was appointed in December 2018 by then Governor John Kasich to the state's Underground Technical Committee. Ed's term began January 1, 2019, and ends December 31, 2022. The Committee was created in 2014 as part of Senate Bill 378, which updated Ohio's underground damage prevention laws and placed the enforcement of these laws within the jurisdiction of the Public Utilities Commission of Ohio (PUCO).

The committee assists the PUCO by providing subject matter expertise and recommendations during excavation violation reviews and recommends a course of action for all inquiries. The goal is to increase public safety by providing accountability of members of the OHIO811 and anyone who excavates or operates underground utilities within Ohio.



W. Glenn

Newest PE

Congratulations to William Glenn, PE, for recently receiving his Professional Engineer license.



M. Roberts

Newest PLS

Congratulations to Matt Roberts, PLS, for recently receiving his Professional Land Surveyor license.

New Employees



S. Mueller

Shannon Mueller joined EMH&T as a Senior Environmental Scientist in our Environmental Division. Shannon is a graduate of The University of Dayton where she earned her BA in Biology. Having worked for other consulting firms over the past 11 years, Shannon has worked as an Environmental Scientist/Biologist as well as an Environmental Key Service Leader. Shannon comes to us as a Certified Ecologist from The Ecological Society of America. And, she also holds prequalifications with ODOT as well as the Ohio Division of Wildlife.



B. Miller

Bryce Miller, PE, joined EMH&T's Transportation Division as a Project Engineer. As a graduate in Civil Engineering from Purdue University, Bryce is also a professional engineer with eight years of experience in her field. She specializes in roadway design from preliminary engineering efforts through final design for large-scale transportation projects throughout the region. Bryce will be assisting Senior Engineers and Project Managers to provide solutions for our DOT and municipal clients.



N. Mill

Nicholas Mill, PE, has joined EMH&T as a Senior Engineer in our Public Works Division. He has nine years of experience providing the design and development of roadway reconstruction, sanitary sewer, water main, and storm sewer plans for municipal clients. He

will work hand-in-hand with Project Designers and Project Managers to develop high-quality plans and specifications for public improvement projects. Nick is a graduate of The Ohio State University with a BS in Civil Engineering.



J. Bevan

Joseph Bevan has recently graduated from The Ohio State University. He has joined the GIS Division as a GIS/GPS Analyst. Joseph will be responsible for application development and support on data conversion and GIS related projects.



EMH&T was named a **Top Workplace for 2019** by *Columbus CEO* magazine.

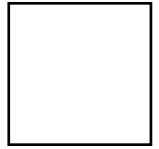
Contact Us

Contact EMH&T's Director of Business Development **Linda Peck** today to schedule a visit at your office. You can reach Linda directly at **(614) 774-1270** or by email at lpeck@emht.com.

You are also welcome to contact any of the experts identified at the end of each article in this issue of *Ingenium*.



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Come See Us



Ohio Stormwater Conference

May 8-10 | Sharonville, OH

Thursday, May 9, 2019 @ 10:30 a.m.

T1B: Green Infrastructure

Pervious Pavement - Lessons Learned During Construction (60 min.)

Douglas C. Turney, PE, CFM, LEED AP



The structural design and materials used in a pervious pavement system are critical to its long term success. Analysis of two structural failures will be presented illustrating the importance of material selection and construction oversight to insure the long-term success of a pervious pavement installation.