

PIPELINE

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS
MANAGING MICHIGAN'S WATER RESOURCES SINCE 1899

—
2020 MACDC INNOVATION &
EXCELLENCE AWARDS
—

MICHIGAN'S DRAIN BUFFER STRIP
PROGRAM PROJECT
—

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RESOURCES MAINTENANCE
SECTION

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PRESIDENT'S MESSAGE

JOE BUSH

Ottawa County Water Resources Commissioner



Dear MACDC family –

I had a whole other message planned, and yet, I found myself deleting the whole article and starting from scratch as our whole lives have been turned upside down with the Corona virus. We have followed orders to “Stay Home, Stay Safe” initiative, and yet our waters throughout the state still flow, the high lake levels are still at record heights, and the winds beat against our lakeshores creating more and more erosion.

First and foremost, I sincerely hope that our entire MACDC family remains safe and healthy – I know that many of your lives completely changed whether it be from more time spent at home or having now to try the role of a teacher, as our schools have closed face-to-face teaching for the year. Please remember to take care of yourselves and families – self-care is crucial as we face these difficult situations. There have been spring breaks that have been missed, birthdays and other gatherings that have had to cancel – those are all losses – and working through those is a process. Don't forget to reach out, even to me, or other members of the board, if you find that you need someone to talk with – I really mean those words. Reach out, we are here, even just to vent or share frustrations.

I think we all realize that COVID-19 is going to place a financial burden on a lot of our associate members and counties. There will be financial constraints and other set-backs, but my hope is that we can be there for each other and come out of this realizing just that, we are here to support each other.

Even though this virus has taken over our daily lives, we still are facing high lake levels, high ground water, lakeshore erosion, and we are anticipating spring flooding from future rain events. These four issues continue to weigh heavily on our actions and plans as we move forward on our projects and planning. Experts are still predicting that our lake levels will rise. As we anticipate our spring rains, best practices tell us to continue to be in constant communication with your emergency manager team and follow Army Corps. dashboard to get up-to-date lake levels. Those counties with larger numbers of drains, don't be afraid to check up on those drains/projects to see how they are flowing, how they actually look during or after a large rain event. It is so helpful to see these projects/issues firsthand. Follow-up with those constituents and other city/government leaders so that again, communication remains high between all parties.

Life certainly has changed in the last few weeks. We all play a very important and vital role in the jobs that you are doing in your communities and counties. Thank you for all you do and we will get through this together as, we are, the MACDC family.

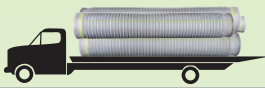
From your President,

Joe Bush

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OF TRUCKS* 49

- RCP uses more trucks
- Machinery required to unload

* Based on 5,000 feet of 30" diameter pipe.

STAGING

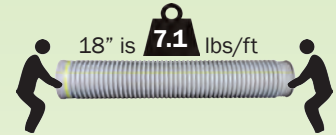


- HP Storm is able to be stacked high
- Nest smaller diameters



- RCP stacks two high

STRINGING



18" is 7.1 lbs/ft

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18" is 168 lbs/ft

- RCP is moved two at a time
- Requires machinery

INSTALLATION

A typical project with 5,000 ft specified on the plans will net you:

- 25 days using HP Storm (56 days with RCP)
- 250 joints using HP Storm (625 joints with RCP)



**30" HP Storm:
Installation Rate
of 200 ft per day***



**30" RCP:
Installation Rate
of 88 ft per day***



*Data compiled from RSMMeans

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2020 MACDC

INNOVATION & EXCELLENCE AWARDS



Selkirk Lake Drain Project Team

SELKIRK LAKE DRAIN

Selkirk Lake encompasses approximately 100 acres with nearly 1,250 acre-feet of volume within its 2.3 shore miles, comprised of approximately 150 lakefront properties, including two campgrounds and a DNR boat launch. Located in Wayland Township in Allegan County, the drain has a maximum depth of 39 feet and an average depth of approximately 13.5 feet. Although properties around the lake are largely developed, no public system for sanitary sewer or drinking water services the area, relying instead on septic tanks and drain fields to provide sanitation.

In the summer of 2011, residents on the Selkirk Lake waterfront experienced devastating flooding, causing lakefront homes to become uninhabitable. They filed an application and a petition with the Allegan County Drain Commissioner (ACDC) for the establishment and construction of a new drain, to control water levels that had risen four to five feet higher than normal on Selkirk Lake. Following cost studies and modeling analysis, in December of 2011 a Board of Determination found the drain petition necessary, so the ACDC selected Eng. to design the construction of the new drain.

PROJECT TEAM:

Denise Medemar, Allegan County Drain Commissioner

Engineer: Brian J. Cenci, P.E.; Eng., Inc.

Other Consultants: GEI Consultants; Northern Concrete Pipe; Progressive AE; Highpoint Community Bank

Honorable Mention

FAHRNI DRAIN

For more than 30-years, farmers have been complaining about poor drainage only to be told by various government agencies that nothing could be done. The Fahrni Drain project proves that by bringing government agencies, regulators and impacted property owners together, we can provide better drainage while protecting vital ecological resources.

The Fahrni Drain (Drain) is a tributary to Gould Drain (Little Creek) located in sections 29 and 30 of Boston Township, Ionia County. The Drain was established in 1939 and serves primarily agricultural and large tract residential properties as well as the I-96 right-of-way.

Approximately 4,000 linear feet of the Drain is located within I-96 right-of-way and

traverses through sections of forested and freshwater emergent wetlands. More than 60 years had passed since any significant work had been conducted along the Drain within the I-96 right-of-way. As a result, more than 2-feet of sediment had built-up in the Drain submerging MDOT feeder culverts, flooding upstream agricultural lands and reducing the hydraulic capacity of the 72-inch diameter outlet culvert under WB I-96 by almost half. In addition, mature trees were growing within the Drain and log jams were further obstructing flow to the point where the original channel within the I-96 right-of-way was barely distinguishable.

In 2016, several property owners complained of flooding and inadequate drainage to the Ionia County Drain Commissioner (ICDC). LRE was retained by the ICDC in November 2016 to conduct an engineering study to

TYLER DAM DRAIN

On the eastern edge of Washtenaw County, in Ypsilanti Charter Township, are two now-defunct factories that once churned out automobile parts for Ford, GM, and B-24 Liberator bombers during the height of WWII. The Willow Run Creek meanders between these properties, and in the 1940's, a dam was built along the creek to create a stormwater impoundment pond in a natural ravine.

Spanning the width of Tyler Pond were two sanitary sewer mains that were built in the 1970's and supported by a timber trestle bridge. The Ypsilanti Community Utilities Authority (YCUA) owns and operates the sanitary sewer lines and the wastewater treatment plant.

Ultimately, YCUA opted to permanently dewater the impoundment through an existing 54-inch pipe under the dam, leaving the dam in place. To aid in the completion of both projects, Ypsilanti Township contacted the Washtenaw County Water Resource Commissioner (WCWRC) to establish a portion of the Willow Run Creek as a county drain. Spicer Group was hired to design improvements that would transform Tyler Pond, which had been a fire-suppression pond for more than 70 years, into a county drain.

PROJECT TEAM:

Evan Pratt, P.E., Washtenaw County Water Resources Commissioner

Engineer: Spicer Group, Inc.

Contractor: Dan's Excavating, Inc.

Partner Agencies: Ypsilanti Community Utility Authority; Ypsilanti Charter Township



Tyler Dam Drain Project Team

assess the condition of the Drain and evaluate potential maintenance or improvement solutions. The resulting project required extensive coordination with the Michigan Department of Transportation (MDOT), Michigan Department of Environment, Great Lakes, and Energy (EGLE), United States Fish and Wildlife (USFWS), ICDC and private property owners.



Fahrni Drain Project Team

PROJECT TEAM:

Robert Rose, Ionia County Drain Commissioner

Engineer: Land & Resource Engineering – LRE

Contractor: Quantum Construction



NEW LIFE MEMBER HONORED LARRY J. PROTASIEWICZ RECEIVES MACDC'S PRESTIGIOUS AWARD

Larry Protasiewicz, P.E., Executive Vice President at Spicer Group, was awarded the Life Membership Award at this year's Winter Conference held at the Radisson Hotel in Kalamazoo.

This award is the MACDC's most prestigious award, and is given to those who are nominated and approved by the association's executive board. It is awarded in grateful appreciation to individuals who have shown dedicated leadership and given in services to the association and its membership.

Larry has been an associate member of MACDC for 30 years and in his time, he

has grown the associate membership and boosted the participation of consultants, contractors, engineers, attorneys, suppliers, etc.

Larry was presented the award by MACDC president, Joe Bush, the Ottawa County Water Resources Commissioner. During the presentation, Don Scherzer, Executive Vice President of Spicer Group, David Thompson, the Monroe County Drain Commissioner, and Roger Zilke, former Berrien County Drain Commissioner and past MACDC president, all spoke on Larry's behalf.

Congrats Larry!

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MICHIGAN'S DRAIN BUFFER STRIP PROGRAM PROJECT

By: Jacob Chapelle, Fahey Schultz Burzych Rhodes

Michigan is not only well-known for its beautiful Great Lakes, but also for its strong and diverse agricultural industry. There are over ten million acres of farmland in Michigan and 800,000 Michiganders employed in the sector; altogether producing over 100 billion dollars annually for the state's economy. A key component to the continued success of Michigan's farming industry is the maintenance of drainage infrastructure. Maintenance of this infrastructure is critically important throughout the state and will become even more important as recent data has shown increasingly frequent and intense rainfall events. In addition to creating additional runoff, these more frequent storm events can also create other problems such as increased erosion and more nutrients entering downstream watercourses.

As Michigan Farmers continue to satisfy the country's need for agricultural production, solutions are needed to combat these environmental challenges and maintain the State's drainage systems. Best Management

Practices, or "BMPs," are structural, vegetative, or managerial practices used to treat, prevent, or reduce water pollution. When used along drains on agricultural land, BMPs such as buffer strips with dense grasses create maintenance lanes, decrease sediment in drains, and can provide water quality benefits.

While other states have passed laws to mandate BMP use on agricultural land, such as Minnesota's requirement for buffer strips on both sides of any public ditches on all farmland, such efforts are often met with strong resistance by property owners because they are not tailored to local needs or conditions. In Michigan, a coalition of Michigan-based partners have created a voluntary program to increase the use of BMPs on established county drains.

Named the "Drain Infrastructure Transactions for Clean H2O" Project, or "D.I.T.C.H.," the project is designed to increase BMP usage and reduce future drain maintenance needs.



Stacy Hisson, an attorney at Fahey Shultz Burzych Rhodes, answering questions on the D.I.T.C.H. program at an informational session with farmers in St. Clair County on Jan. 12, 2020.

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BUFFER STRIPS CONT.

This program was developed by the Nature Conservancy, the Michigan Farm Bureau, the Saginaw County Public Works Commissioner, the Washtenaw County Water Resources Commissioner, and the Monroe County Drain Commissioner, with additional support from the Cook Family Foundation. In 2017, the project partners received a generous Conservation Innovation Grant from the United States Department of Agriculture Natural Resources Conservation Service.

The project seeks to improve water quality and drain efficiency by 1) incentivizing the adoption of agricultural BMPs; 2) developing a methodology to allow drain offices to consider BMP benefits when levying drain assessments; 3) provide tools and resources to make this easy for drain offices to implement; and 4) increasing the number of BMPs in drainage districts to reduce sediment in drains (thereby reducing future drain maintenance). As the project partners considered which BMP to use in the project, buffer strips were chosen for three key reasons:

1. Buffer strips are already in use and are an accepted practice
2. They are easy to install and monitor
3. Have been proven effective Buffer


To achieve the goal of the D.I.T.C.H. program and incentivize BMP usage, an effective strategy was needed. The project team opted to focus on offering reduced drain assessments for landowners who voluntarily installed buffer strips on their property. For this strategy to work, the methodology had to be both legally defensible through the Drain Code and scientifically based. The team worked with Fahey Schultz Burzych Rhodes, PLC and Spicer Group, Inc. to develop a method that met both criteria. Past studies and research were used to develop an equation for reducing drain assessments which quantified the benefit to the drainage district for having a buffer strip installed.

In addition to being defensible, this methodology had to be easily explainable at a Day of Review and work regardless of the project's cost, the size of the drainage district, the percentage of agricultural lands in the district, and increases in participating properties. Numerous actual assessment rolls were used to evaluate the potential impact of this new methodology. As these project components were designed, many counties wanted to participate in the project, but the project partners needed to test the program and streamline the process. In 2019, a pilot project was selected, and the program was successfully used by Saginaw and Gratiot Counties on an intercounty drain project in coordination with the Michigan Department of Agriculture and Rural Development.


Following the successful pilot program, the project team implemented lessons they learned and built on its success by holding workshops across Michigan to gain input from drain commissioners as to how the program could work in each county. Informational sessions have also been held for property owners who are curious about the project's benefits.

As a completely voluntary program, D.I.T.C.H incentivizes landowners to implement buffers by reducing their drain assessment costs while protecting topsoil and nutrients from running off. Drain commissioners are incentivized to give assessment savings based upon the benefits the drains receive in their jurisdictions.

In a participating drainage district with a petitioned drain project, interested property owners qualify for the program if they own land classified by County Equalization as agricultural land. The owner must be willing to implement and/or maintain a buffer strip plan for their property to qualify for the BMP reduction factor in the drain apportionment. Property owners who already have qualifying buffer strips in place on their agricultural land may also qualify and benefit from the BMP reduction factor. The BMP



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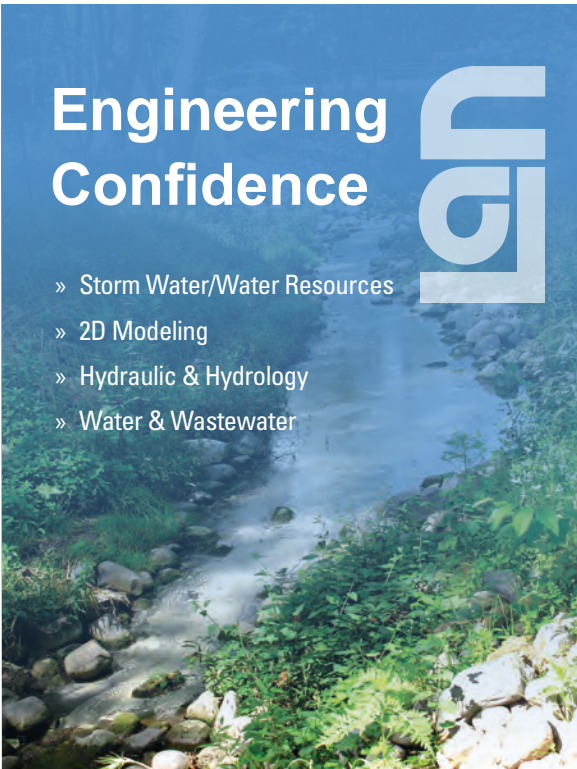
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BUFFER STRIPS CONT.

factor will still apply even when the buffer strip is enrolled in another program(s).

To make the process even easier, a simple spreadsheet calculation has been developed for drain commissioners to show prospective property owners their assessment savings. This is helpful because property owners can better understand what percent of savings they will receive, and tailor the BMP usage to their needs.

Property owners will then enter into an agreement with the drainage district to implement and maintain an agreed upon BMP plan. When apportionments are determined, the drain commissioner will use a BMP factor in the apportionment to reduce the assessment where agreements are in place. The width, type of plantings, and length of the agreement vary by county. In certain situations, the drainage district may agree to install the buffer strip as part of the petitioned project construction.

Going forward, the project aims to increase the use of BMPs, especially by encouraging the continued use of buffer strips. Additional BMPs may be integrated into the project in the future, including blind inlets, detention/storage, drainage tile outlet structures, and even non-agricultural BMPs.

For more information on the D.I.T.C.H Project, check out the Podcast episode "Clean and Clear: Partnership with local drain officials" from the In the Weeds Podcast Series, a podcast series hosted by the Michigan State University Extension Field Crops Team. Interested property owners are encouraged to contact their local drain commissioner for more information on participating in the program.

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UNIQUE PRECAST SOLUTION RESOLVES CRITICAL CULVERT FAILURE

By: John Washabaugh
Northern Concrete Pipe, Inc.



Aerial photo of completed installation of unique precast box culvert

The Calhoun County Road Department discovered a series of CMP Culverts north of the city of Battle Creek that had reached the point of Critical Failure. Various design alternatives were considered in an attempt to resolve this issue in a timely, cost-effective manner. Halbert Road is a vital connector in Bedford Twp. between the City of Battle Creek, and the rural subdivided area beyond its city limits.

One such alternative was a “clear span” bridge, however, due to the unique skew of Waubascon Creek, the structure would be much larger than necessary in order to span from bank to bank. Further, this design would have extended beyond the right of way to meet permit limitations. The additional span lengths, sheet piling substructure costs would have pushed the project total way outside of proposed

project funding.

A preliminary design which utilized precast concrete box culvert was initiated. Culvert sizing and other considerations by DEGLE,



Yet another overview complete with stream diversion, and contractor foot bridge

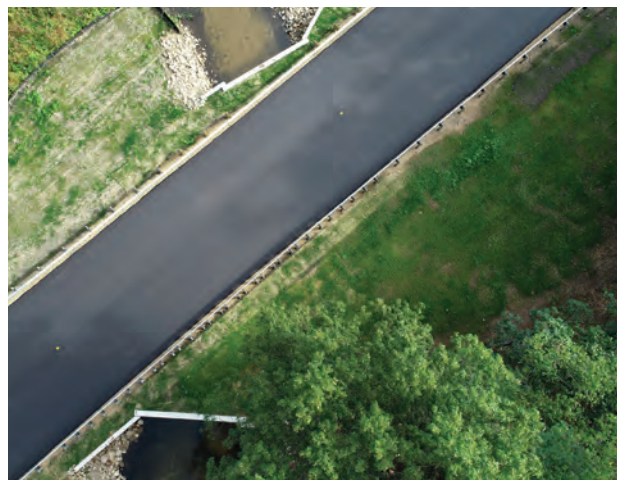


formerly DEQ, required that the final design would not adversely affect the hydraulics of Waubascon Creek. Further, no work could be done within the water between May 1st and June 30th due to critical spawning and migration periods. Clearance to accommodate future kayak, and canoe enthusiasts was a priority as well.

Kristine Parsons, P.E., the Director of Engineering for the Calhoun County Road Department reached out to Casey Collings, P.E. of Great Lakes Engineering Group, LLC for his valued insight for competitive alternatives. Casey suggested an approach he used in Tuscola County whereby precast concrete box culverts were cast in traditional, and radial segments to stay within the restrictive right-of-way. Engineer Samuel Leatch, P.E., and his team at Wightman in Kalamazoo were instrumental

in the overall design for this entire project.

CRA Associate member Northern Concrete Pipe, Inc. (NCP) with headquarters in Bay



Drone photo of project after paving and restoration




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PRECAST SOLUTION CONT.

City, Michigan was consulted to assist in assembling working drawings. These drawings confirmed that the layout for the 20' span x 5' rise precast concrete box culvert would stay within the designated right-of-way. Further, Northern's design would appear on the plans and proposals from which the contractors would bid.

Balkema Exc., Inc., of Kalamazoo, MI, was the low bidder. Overall construction took approximately 7 weeks. Installation of all of the 22 ton sections was achieved in only two days. The culvert utilized 8 ea. sections of traditional design, and 15 ea. sections with a 5 degree skew. Other precast elements such as wingwalls, headwalls, and muddills further assisted in expediting the completion of this project.

Tim Balkema, of Balkema Exc, Inc. adds: "There were a few challenges to building this job. One was getting the right sized crane close enough to set the pieces since it was such a spread out footprint, another was getting the alignment absolutely correct for the serpentine layout of the culvert. The placement and accuracy was achieved by getting quality data from NCP and Wightman to us so we could translate it with our layout equipment to the exact place of every section as designed. The communication throughout the construction between Calhoun County, Wightman, NCP and Balkema kept everyone on the same page and ahead of schedule in return for a job we all are proud of." Kristine noted that although she didn't have any previous work history with Balkema Exc. they were very conscientious, worked very quickly to complete this project within budget. Further adding, "Wightman, and Great Lakes Engineering were essential in getting this project to life". Northern Concrete Pipe, Inc. would like to thank everyone at the Calhoun County Road Department, Great Lakes Engineering Group, and Wightman for specifying durable, reliable Precast Infrastructure products.

NEW DRAIN AND WATER RESOURCES MAINTENANCE SECTION ADDED TO WATERSHED MANAGEMENT CERTIFICATION PROGRAM

By: Christine Kosmowski, MDARD

Ashley Allen, Hubbell, Roth & Clark, Inc.

Stephanie Petriello, Hubbell, Roth & Clark, Inc.

Recognizing that an interdisciplinary approach to watershed management is needed, the Institute of Water Research (IWR) at Michigan State University is partnering with the Michigan Water Environment Association (MWEA), to enhance an educational program that offers professionals with responsibilities or interest in watershed management a unique opportunity to acquire certification on-line. Civil and environmental engineers, drain commissioners and their staff, contractors, and policy makers, to name a few, are all encouraged to participate and will find the

courses beneficial. Additional benefits to the Watershed Management Program include:

- Interdisciplinary approach to watershed management
- Affordable, flexible paced courses
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DRAIN MAINTENANCE CONT.

Protection Agency (EPA) and the Department of Environment, Great Lakes, and Energy's (EGLE) watershed management principles. In Michigan, the jurisdiction and influence of County Drain or Water Resource Commissioners is critical to stormwater conveyance and water quality protection. This warrants a discussion about how drains must be a part of a comprehensive planning effort for watershed management. A group of volunteers from the Drain and Water Resources Workgroup (DWRW), which is comprised of representatives from MACDC, MDARD, EGLE, MDNR, MDOT, NRCS, USACE, USFWS, and USFS, compiled and edited materials to be included in the MWEA-IWR program. In early 2020, Course 8: Best Management Practices (BMP) – Drain and Water Resources Maintenance was added to the certification program. This Course highlights the roles of County Drains and Drain Commissioners, the importance of inspection and maintenance,

best management practices for various maintenance activities, and overall concepts to ensure that the primary goal of conveyance is met but, in a manner, consistent with watershed based water quality objectives.

Courses can be taken individually with certificates of completion issued for self-reporting of CEUs or PDHs. The online courses are designed to be flexible to help accommodate personal schedules. In general, each course should be completed within three weeks. Each course is offered entirely online and can be accessed 24/7.

To obtain the Watershed Management Certification, participants are expected to complete the entire program within 24 months and attend one MWEA event. Courses need not be taken sequentially and can be taken simultaneously. Each course costs \$100 each and there is a \$30 fee for enrollment in the certification program.



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Course 6: Understanding Soil Erosion & Sediment and Pollution

Course 7: Historical & Legal Issues of Watershed Management

Course 8: Best Management Practices (BMP) – Drain and Water Resources Maintenance

For more information visit <http://www.mi-wea.org/watershedcert>



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Municipal Law

Clark Hill's Municipal Law Group represents over 200 municipalities including drain and water resources commissioners, drainage boards, counties, county road commissions, cities, townships and villages. Clark Hill serves as general counsel of numerous other government and inter-governmental entities including brownfield redevelopment authorities, fire and other emergency services boards, school districts, sanitary sewer authorities and more.

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In coordination with the Municipal Law Group, Clark Hill's Public Finance Group has comprehensive knowledge of federal and state laws that govern the issuance of tax-exempt debt as well as state and local election laws. Clark Hill has a wealth of experience in drafting all legal documents relating to the issuance of tax-exempt debt for drain and water resources commissioners.

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Clark Hill's Environment, Energy & Natural Resources Group provides counseling and litigation experience with deep substantive knowledge in all areas of state and federal environmental laws and regulations. Our services include regulator counseling and defending environmental remediation and enforcement actions.

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ASSOCIATE MEMBER NEWS

FLEIS & VANDERBRINK ADDS 12 STAFF, INCLUDING 5 IN CONSTRUCTION SERVICES GROUP

New Fleis & Vanderbrink Construction Services staffers include senior technician Todd Winkle and technicians Michael Vincent, Jeff Catlin, Noah Lafferty and Josh Parsons.

Additional hires company-wide include: Kelly S. Hon, a senior project manager and Neal Dearth, technician in the Environmental Services Group; Chris Hennessy, business development representative, and Yadong Dong, PE project manager, East Michigan Services Group; Peter Tierney and Euponine Pierre', Engineers-In-Training (EITs) West Michigan Municipal Group; and Amy Poncato, administrative assistant, West Michigan Group.

“We are thankful to be able to continue to attract great people in a market where talent is hard to find,” said Paul R. Galdes, principal and president of F&V. “This speaks highly of our HR team and our employees who love to tell others about what a great place F&V is to work at. There is no better way to recruit than through employees who enjoy what they are doing.”



Hon

Winkle has nearly 30 years of experience as a field technician in the municipal area, including supervisor for local agency Michigan Department of Transportation (MDOT) projects. He'll be assisting the Farmington Hills office with construction observation services in southeast Michigan.



Winkle

Vincent, a former U.S. Army staff sergeant, has nearly 25 years of construction observation experience specializing in bridge projects. The certified bridge inspector brings underwater inspection expertise to the Grand Blanc office and southeast Michigan.



Vincent

Catlin, Lafferty and Parsons will work out of the Grand Rapids office. Catlin is an accomplished AutoCAD and Environmental specialist. He has nearly three decades of experience including 10 years of construction observation of sewer and water developments.



Catlin

Lafferty has several years of MDOT road construction experience. He will join Parsons in focusing on municipal road and utility projects.



Lafferty

Hon, who has nearly two decades of experience leading and guiding drinking water protection initiatives for local units of government throughout the state, will oversee F&V's Source Water Protection (SWP) staff. She'll be based at F&V's Grand Rapids headquarters but will travel statewide. Hon spent the past 16½ years with the Michigan Rural Water Association (MRWA).



Parsons

Dearth brings extensive experience working on environmental and health and safety projects throughout the United States, especially nuclear sites and their decommissioning. He'll provide assistance for a growing number of demolition projects in the Kalamazoo office.



Dearth

Hennessy, who has a master's degree in labor relations from the University of Massachusetts Amherst, brings more than 15 years' working knowledge of local, state and federal project building experience. He will be working on developing community relationships.



Hennessy

Dong, who received his doctoral in civil engineering from Michigan Technological University, has over six years of experience in land development, municipal engineering, pavement evaluation, construction engineering and structural engineering. His experience will help the Farmington Hills office with stormwater management, PASER evaluations and site civil design for private development projects.



Dong

Tierney, a former intern at F&V, will provide civil engineering support for the design of municipal, private and institutional projects. He will be working on infrastructure, utility

and transportation projects the Grand Rapids area.

Pierre, another former intern at F&V, will assist the Kalamazoo office in stormwater management and structural engineering projects. Pierre has a civil engineering degree from Western Michigan University and is working on a master's degree in structural engineering at WMU.

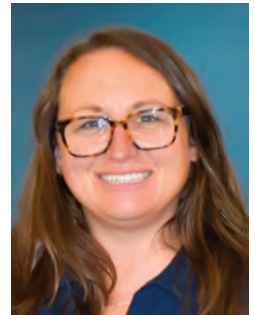


Tierney

Poncato is a former administrative assistant for a water district and groundwater agency in California. Her experience will help project managers with correspondence, report preparation and specification development including bidding and construction phase engineering services.



Pierre



Poncato

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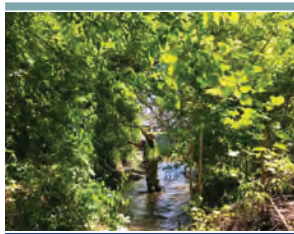
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