

PIPELINE

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS

GREEN INFRASTRUCTURE FOR OTTAWA COUNTY

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with Environmental Benefits*

*MACDC Summer Conference
Session Recaps*

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PRESIDENT'S MESSAGE

ROGER H. ZILKE

Berrien County Drain Commissioner



REFLECTIONS

So, the Primary Elections are past us. I purposely waited to write this message until voting was complete. As I guessed, (with some sadness) "ALL" of the incumbents were not returned to their Offices. And then there were races in counties where the incumbent didn't seek re-election (mine among them). Yes, there were some surprises! To that end, there will now be some restructuring of the Association Officers according to plan (First Vice, Second Vice, etc.).

Now we (some) prepare for a 'Lame Duck' period to transition some of our offices to the next Drain Commissioner/Water Resource Commissioner. In the interim, might I suggest that those of us leaving stress the importance of our offices and just how much we are involved in water management in our counties, and the State.

I have talked with some Committee Chairs. I see that the New Drain Commissioners School is well on its way in planning. Great job Committee, the School will be here PDQ.

In my last Quarterly meeting with Reps of MDEQ, there was talk that the EPA was close to giving us an answer to how our State program would fare at the Federal level, but so far no such luck. We continue to wait for an answer that apparently has no particular end date.

All that being said, I look forward to seeing you all.

Roger Zilke has served as Berrien County Drain Commissioner since 2004. Send comments to rzilke@berriencounty.org.



Stacy Hissong presents Roger with a tribute signed by members of the Legislature and the Governor for his years of service.

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SUMMER CONFERENCE RECAP

STREAMING FORWARD: MACDC'S NEW COMMUNICATIONS PLAN FOR THE 21ST CENTURY

Michelle LaRose, Livingston County, Communications Committee Chair



LaRose

This session presented an overview of MACDC's new public relations campaign, which is aimed at increasing awareness about the important work being done by drain commissioners throughout Michigan.

In early 2015, the MACDC Board of Directors held a retreat to develop a strategic plan for the

association. Goals of the strategic plan include:

- Public education/Drain Commissioner image
- Education of other officials
- Legislative/Drain Commissioner functions
- Viability of MACDC

The Communications Committee has been working with GÜD Marketing to develop educational materials that would help achieve the goals of the strategic plan. These include:

- Improvements to Pipeline (updated look, feature stories, staff spotlight and more)
- Improvements to the Website (new layout, mobile compatible)
- Fact Sheet
- FAQs
- Brochure (customizable)
- Presentation Template

MACDC LEGISLATIVE UPDATE

Deena Bosworth, Director of Governmental Affairs, Michigan Association of Counties

Steven Koski, attorney, Fahey Schultz Burzych Rhodes PLC



Koski

EPA PROGRAM REVIEW

A formal program review from EPA is expected soon. It is anticipated that the program review will have two items specifically relating to Drain Commissioners' exemptions.

GOVERNOR'S 21ST CENTURY INFRASTRUCTURE COMMISSION

The 27-member commission includes individuals in business, government, nonprofit, and academic communities. One of the appointees includes Washtenaw County Water Resources Commissioner Evan Pratt. The commission is tasked with presenting an infrastructure assessment and recommendations by November 30, 2016.

MISS DIG STATUS

There is an ongoing dispute over MISS DIG mandatory membership fees. MISS DIG has submitted a request to the Michigan Public Service Commission (MPSC), which is in the process of promulgating rules on how they deal with that statute. MACDC has submitted comment; however, MPSC lacks jurisdiction over Drain Commissioners. Currently the issue is at somewhat of a standstill.

WATERS OF THE UNITED STATES UPDATE

The new Waters of the United States Rule, which in part defines which rivers, streams, lakes and marshes fall under the jurisdiction of the Environmental Protection Agency and the Army Corps of Engineers, took effect in August 2015. Since it was adopted, there has been ongoing litigation, which is still pending. The Sixth Circuit granted a nationwide stay and there are 21 consolidated cases. Petitioner's briefs are due September 30, 2016, with oral arguments due in early 2017.

PA 222 CLARIFICATION

House Bill 5282 — “This legislation, if adopted, will save taxpayer dollars and resources that are currently being used on defending claims and lawsuits. It will make it clear that sewer service providers are not liable when rainfall is so intense that it overwhelms collection and treatment infrastructure.” — Jim Nash, Oakland County Water Resources Commissioner

- Sponsored by Representative Webber (R-Rochester Hills)
- Clarifies “sewage disposal system event”
- 1.7 inches or more in a one-hour period
- 3.3 inches or more in a 24-hour period.
- Clarifies “defect”
- Designed and constructed to state standards or applicable rule or order

CERTIFICATION OF INSURANCE

- “Additional insured” issue arising from 2014 update to Insurance Code
- Certificate of insurance cannot supersede underlying insurance policy
- Certificate of insurance is unenforceable on its own
- Obtain copy of policy and endorsement to ensure additional insured status

PENDING ITEMS

Below is a list of pending bills, many of which have been sitting in the House and Senate for a long time.

HB 5152

- Exemptions for Federal Water Pollution Act permit
- Sponsor: Rep. Larry Inman
- Introduced: December 15, 2015
- Currently: House Committee on Agriculture

HB 5279

- Consolidation of drainage districts
- Sponsor: Rep. Ben Glardon
- Introduced: January 28, 2016
- Currently: House Committee on Local Government

HB 5792

- Adjust minimum permit term for treatment of invasive aquatic species
- Sponsor: Rep. Martin Howrylak

- Introduced: August 3, 2016
- Currently: Referred to House Committee on Natural Resources

HB 4082

- Sale of county or intercounty assets
- Sponsor: Rep. Kurt Heise
- Introduced: January 28, 2015
- Currently: Referred to House Committee on Local Government

HB 4540

- FOIA infrastructure exemption
- Sponsor: Rep. Kurt Heise
- Introduced: May 5, 2015
- Passed House: March 23, 2016
- Currently: Referred to Senate Committee on Elections and Government Reform

HB 5016

- Telecommunication Company Reimbursements
- Sponsor: Rep. Eric Leutheuser
- Introduced: October 22, 2015
- Currently: Referred for Second reading in the House after recommendations

MICHIGAN MUNICIPAL WETLAND ALLIANCE

The Alliance is made up of five members, MML, MTA, MACDC, MAC and the County Road Association. This newly created directorship has applied to the IRS for non-profit status. The Alliance is going to partner with the Department of Natural Resources (DNR) and the DEQ to use DNR land to help improve habitat, build wetlands, and bank credits to sell to those four-member entities at a subsidized rate. We are still in the beginning phases of this effort, but expect to hear more soon.

APPROVED BILLS/PUBLIC ACTS:

PA 171 OF 2016 (PROPERTY ENTRY NOTIFICATION) HB 4656

Requires seven days’ notice before entering property for maintenance, with some exceptions.

Effective September 12, 2016

PA 115 OF 2016 (ASSESSING ABANDONED PROJECTS) HB 5278

Addresses the assessment of costs related to abandoned project.

Effective May 10, 2016

PA 52 OF 2016 (ADVERSE POSSESSION) HB 4747

Protection against claims for the recovery or possession of property against governmental entities

Effective June 20, 2016

PA 27 OF 2016 (TERM BONDS) HB 4758

Allows “term” bonds for projects performed under Drain Code

Effective March 1, 2016

MACDC POLITICAL UPDATE: ELECTION 2016

Deena Bosworth, Michigan Association of Counties
Steve Koski, Fahey Schultz Burzych Rhodes, PLC

The current makeup of the Michigan House of Representatives is 63 Republicans and 45 Democrats, with two vacancies. All 110 seats will be on the ballot this year, with 52 seats considered “safe” Republican seats and 43 seats considered “safe” Democratic seats. So the battle for control of the House in this year’s election focuses around 15 swing seats, with the Republicans needing just four swing seats to retain a majority. The swing districts are: 23, 25, 30, 52, 56, 57, 62, 71, 76, 91, 97, 99, 101, and 106.

PUBLIC ACT 171 – DRAIN MAINTENANCE NOTIFICATION

Stacy L. Hissong, Fahey Schultz Burzych Rhodes PLC



Hissong

This brief session gave an explanation of the new Drain Maintenance Notification law that went into effect on September 12th.

Section 201 states that at least seven days before entering a property for certain maintenance the drain commissioner shall notify the property owner

by first-class mail. The new statute applies to excavation and tree removal, but does not apply to inspections, spraying, or mowing. It also does not apply to work performed under Section 196 (8).

There are no time restrictions on how early notifications can be sent. Notification should be sent close to the time of maintenance, but also early enough to allow farmers to plan.

BUILDING RELATIONSHIPS WITH FARM BUREAU

Mike Hard, Branch County Drain Commissioner

Colleen Albright, Farm Bureau Branch County Administrative Manager

Pat Albright, Farmer and former Farm Bureau Board Member



Mike Hard and the Albrights

Over half of Michigan’s farmland requires drainage to produce food, feed and fiber. This session emphasized why it is essential for Drain Offices to communicate with their county Farm Bureau boards.

As the state’s largest general farm organization, Michigan Farm Bureau offers great opportunities for county Drain Commissioners to:

- Meet Michigan farmers and build relationships
- Learn relationships regarding land rental and who pays property taxes
- Build relationships for mutual benefit
- Better understand farming challenges
- Better understand the Michigan Drain Code

Farm Bureau can be an asset to Drain Commissioners by helping them get to know landowners and farmers. As farms get bigger and control more and more acres, it’s not always easy to learn who pays the land rent and who pays the taxes. Some agreements might state that any assessments based on drainage are paid by the farmer—not the landowner. “When drain issues arise, Drain Commissioners need to keep in mind it might not be the landowner paying the bill. It might be the gentleman who farms it,” says Mike Hard, Branch County Drain Commissioner.

Partnering with Michigan Farm Bureau is your opportunity to get to know the far-ranging challenges of farming and to help explain the Michigan Drain Code. Farm Bureau’s local county board may or may not understand the ins and outs of the Drain Code and they can be very helpful in spreading the word about what’s involved to get a job done.

Michigan Farm Bureau 2016 Policy Book is available online at: <https://www.michfb.com/MI/MFB/policy.aspx#category=&keyword=&page=1&pageSize=10>. Their policy pertaining to agricultural drainage is on pages 81-83.

DRAIN OFFICE USES FOR LIDAR

Eric Deibel, Eaton County Deputy Drain Commissioner

Marya Colpaert, P.E., LEED AP, Saginaw County Deputy Public Works Commissioner

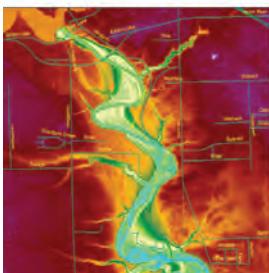
Steve Roznowski, P.E., Project Manager, Spicer Group, Inc.



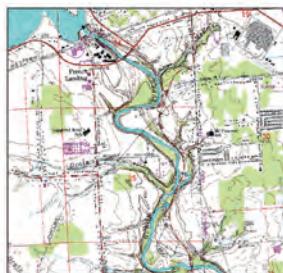
Deibel, Roznowski, and Colpaert

LiDAR stands for “light detection and ranging.” It utilizes a laser to scan the ground surface, measure the amount of time it takes for the laser to hit an object and come back. This technology makes LiDAR a valuable data collection tool for getting information about ground surface elevation. It is a helpful supplement to doing survey work.

The three types of LiDAR include 1) aerial, 2) mobile and 3) static. Aerial LiDAR, the type most available to Drain Offices, is collected by survey aircraft, used by the USGS and has replaced contour maps. A LiDAR map uses colors to distinguish high and low areas and you can pick your own color scale. “With LiDAR, depending on your colorization, you can really help make those little ridges pop out at you,” says Marya Colpaert, Saginaw County Deputy Public Works Commissioner.



LIDAR



USGS QUADRANGLE

Potential uses of LiDAR include:

- 1) Day of Review of Drainage District Boundaries
- 2) Watershed delineation
- 3) Culvert Sizing

- 4) Concept Design
- 5) Plan Reviews
- 6) Resolving Landowner Disputes
- 7) Hydraulic Modeling
- 8) Flood mapping

LIMITATIONS OF LIDAR

There are a few things you need to keep in mind with LiDAR:

- 1) It does not see under water. Most likely it’s going to reflect off the water surface, and that’s the elevation you’re going to see.
- 2) It’s not very good at abrupt changes in grade and steep slopes.
- 3) It’s a snapshot in time. It’s going to reflect existing conditions.

RECORDING HISTORICAL DRAIN EASEMENT

Lauren K. Dutcher, Fahey Schultz Burzych Rhodes PLC, Attorneys at Law

Alan Boyer, PE, LSG Engineers & Surveyors



Boyer and Dutcher

This session covered the why, how, and when for recording historical drain easements. It also looked at suggestions to aid the Drain Office in providing historical information to landowners.

By law, any drainage easement granted prior to 1956 was not and is still not required to be recorded with the Register of Deeds. However, it is still considered a valid easement. Because there are many drainage easements that are not recorded at the Register of Deeds office, many property owners are not aware that they have a county drain that crosses their property. They may see it as a stream or a creek and don’t really understand that it has infrastructure and needs to be maintained.

THE DRAIN CODE OF 1956 STATES THAT:

- Drain easements must now be recorded at the county Register of Deeds’ office.
- Any release of right of way granted prior to 1956 does not have to be recorded at the county

Register of Deeds' office.

- Releases of right of way granted prior to 1956 are still valid and binding against current property owner.

Historically, every county kept track of drain easements a little differently. Sometimes they transcribed notes in a book. Sometimes they recorded a Right of Way form in the Drain Office. Some releases were also recorded at the County Clerk's office. So the Drain Office was not the only place where drain easements were recorded in the past.

If you look back far enough in the record, some drains were established by an act of the state legislature. In Public Act 84 of 1885, it was stated that "said commissioner of his successor shall file with the county clerk of each county a complete account of his doings hereunder, together with the survey plans and specifications used..."

Engineers are normally the individuals who research the historical easements. They're looking for documents called Releases of Rights of Way, but they miss many of the actual easement documents when they do that, especially if they don't understand how the law has changed through the course of time. For example, in the 1800s, often times the petitioners included a Release of Right of Way in the petition document itself. In the return of the special commissioners, or the orders of the Drain Commissioners (especially in the 1870 and 1880 documents), that's where the majority of those older easements are going to be.

In order to record an Affidavit of Historical Easement, you need something granting you that easement -- where you obtained that right, whether it's in a historical document that's on file with the Drain Office or whether it's through a statutory provision of the Drain Code:

- Release/Waiver of Damages
- Historical Releases of Right of Way
- Return of Special Commissioners
- Final Order of Determination
- Section 6 of the Michigan Drain Code

"When you look at how things are done with land sales, with purchases, with title work, with what used to be called abstracting, you find out that today there's really only one place that people look -- the Register of Deeds office, and the Register of Deeds office doesn't have all the information," says Alan Boyer (LSG Engineers & Surveyors).

Title companies are not required to check with the Drain Office for recording Historical Right of Ways. Normally, that's called an exception. Anything that's not recorded in the Register of Deeds would be an exception. When you get your title work back, there are a number of small exceptions listed at the bottom of the policy. Recording Affidavits of Historical Easements allows them to show up in a title search.

It is important to send property owners notice of the recording of historical easements, inform them how to obtain a copy from the Register of Deeds office and provide them with a "frequently asked questions" sheet. Having knowledge of an easement puts property owners and developers on notice to potential restrictions on land use (e.g. landscaping, fences, sheds, pole barns). By providing notice to existing and purchasing property owners, you can avoid conflict during projects.

ELEMENTS OF AN AFFIDAVIT

- Name of Drain
- Explanation of Affidavit
- Summary of Historical Right of Way (including exhibits)
- Current Parcel IDs and Legal Descriptions of Parcels Affected
- Signature of Drain Commissioner

WHEN TO RECORD

- During petitioned projects
- During historical file review for a Section 197 Day of Review
- Anytime

It can be helpful to ask if there is a surveyor affidavit for the property. Historically, surveyors who have the ability to file surveyor affidavits have done that, especially where there are ambiguities. Also, getting updated drain maps into the hands of zoning administrators, realtors and building inspectors issuing building permits makes things clearer for everybody.

DRAINS AND LAKES: MAKING THEM

COMPATIBLE IN A TIME OF ACCELERATED NUTRIENT LOADING

Jennifer Jermalowicz-Jones, Restorative Lake Sciences



Jermalowicz-Jones

Water clarity has a distinct effect on property value that can be measured in dollars. Using the Secchi disk to measure water transparency, it was shown that a one-meter improvement in transparency increased property values while a one-meter reduction in transparency decreased property values. The financial gain was between

\$11 and \$200 per linear foot of lake frontage while the decrease in clarity cost over \$300 per linear foot of lake frontage.

Unwanted sediment entering a lake results not only in a reduction in clarity but also an increased nutrient load, a loss of aesthetics, a decline in dissolved oxygen, and even fish kills in severe situations. A number of tangible solutions are available, such as:

- Amending local ordinances to allow natural shorelines, vegetative buffers and rain gardens
- Drain improvements
- Green building

SHERMAN LAKE CASE STUDY

A couple of the drains around Sherman Lake, in Cass County, Michigan, were found to be contributing fairly significant amounts of sediment into the lake.

In the case of Sherman Lake, a modified “trap and treat” filter was used. As the water comes through the barrier, phosphorus and nitrogen absorb onto the charcoal particles and get left behind. The filter doesn’t allow the larger particles of suspended solids to pass through.

CONCLUSIONS

- Nutrient barriers seem to have a lifespan of three years before replacement may be needed.
- Nutrient barriers work to reduce nutrients and TSS, and more research is being conducted on E. coli bacterium.
- In cases where barriers are inundated with high water volumes, other improvements (i.e. detention basins, sediment traps, etc.) may be needed.

- Drains remain a critical nutrient source to many lakes and can significantly impact water quality.

MDEQ WATER RESOURCES DIVISION UPDATE

Kim Fish, Assistant Division Chief, Water Resources Division



Fish

The Michigan Department of Environmental Quality (DEQ) has recently undergone staff changes. Heidi Grether is the new Director and Robert Wagner is the new Chief Program Deputy. In the Water Resources Division, Teresa Seidel will assume the duties of Division Chief, effective August 28.

CELEBRATING 32 YEARS OF MICHIGAN’S 404 PROGRAM

Michigan was the first state to receive authorization to run the wetlands program. They are still working with the USEPA on their review of Act 98 of 2013.

CLEAN WATER RULE

The Sixth Circuit Court announced that they have authority to hear all of the waters of the United States cases instead of each individual district court. Michigan would have two years to make changes to state laws if that were necessary. The eastern states would be less impacted by the rule than the western states, due to their climate.

FLINT WATER CRISIS

Unfortunately, earlier this year a lot of work got diverted because of the Flint water crisis. Staff were pulled off their regular work to take water samples, look for lead pipes, take samples in schools, deliver filters and train residents how to install and use filters, etc. There are GIS folks still at work mapping the neighborhoods and lead lines in Flint, and where lead lines have been replaced. To access most recent information on the Flint water crisis, visit <http://www.michigan.gov/flintwater>.

LAKE ERIE ALGAL BLOOMS

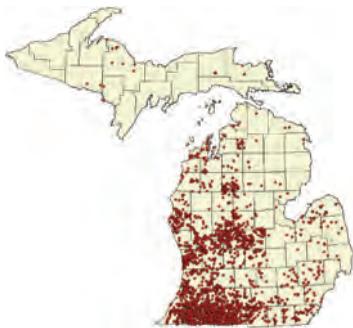
Another area of focus for the WRD is Lake Erie and its harmful algal blooms. For the last four to six years MDEQ has been monitoring the contributing watersheds in Michigan. The Water Resources Division developed an implementation plan to reduce phosphorus loading. The goals of the plan are to:

- Maintain phosphorus reductions at the Detroit Waste Water Treatment Plant (WWTP)
- Achieve phosphorus reductions at the Wayne County – Downriver WWTP
- Achieve target phosphorus reductions in Michigan's part of the Maumee.
- Monitor and understand harmful algal blooms (HABs)
- Understand the role of invasive mussels
- Understand the specifics for phosphorus reductions in the Raisin River

REAL-TIME BEACH MONITORING FOR E.COLI

One of the exciting things the WRD has working on is real-time beach monitoring for E.coli. With monies approved by the legislature in 2014 and 2015, they have been able to equip ten health department labs across the state with new equipment to do eDNA testing for E.coli. This rapid testing for the presence of E.coli at beaches brings results within hours instead of days. WRD partnered with MSU to do outreach and training. As part of this effort, the DEQ has developed a user friendly website called BeachGuard, where you can look up any public beach closures in Michigan. For further information, see: <http://www.deq.state.mi.us/beach/>.

WATER WITHDRAWAL ASSESSMENT



The Water Use Advisory Council issued a report in December 2014 that outlined 69 recommendations to improve the water withdrawal assessment process in Michigan. The

graphic above shows all of the large quantity water withdrawal wells that are registered in the state. This represents more and more pressure on our natural resources and is a growing concern.

PART 31 RULES

WRD is updating Part 31 Rules pertaining to 1) spill response, 2) floodplains and 3) industrial pretreatment. To bring these rules up to modern standards, WRD has been meeting with various stakeholders and will be talking with legislators about getting the updated rules in place.

INVASIVE SPECIES MANAGEMENT

The WRD interdepartmental program is currently working with DNR and the Department of Agriculture to prevent, detect and manage invasive species across the state. Last year, the legislature appropriated about \$5 million for this effort, \$4 million of which went out as grants to local communities and non-profits to be used for specific education and outreach on invasive species. The New Zealand Mud Snail and *Didymosphenia geminata* (Didymo or Rock snot) are two new invasive species that were discovered in the last couple of years.

GREAT LAKES COMMERCIAL NET PENS

There has been interest in learning how to develop commercial aquaculture by putting Net Pens in the Great Lakes. Currently, there is only one aquaculture Net Pen operation in the Great Lakes and it is in Canada. A work group is studying the science behind this, but ultimately Governor Snyder and his administration determined that they would not support putting commercial aquaculture Net Pens in the Great Lakes.

ENBRIDGE OIL SPILL 2010

After six years of hard work, the WRD is pleased to report that the vast majority of the Enbridge oil spill has been cleaned up. The department continues to monitor residual oil sediment, habitat restoration and wetland mitigation restoration within the water corridor and watershed. As a result of the oil spill, the governor created the Michigan Petroleum Pipeline Task Force, which issued a report in 2015.

WASTEWATER RECYCLING

The WRD is partnering with the Michigan Water Environment Association to look at wastewater recycling in the state.

RAILROADS AND THE DRAIN CODE

Douglas Kelly, Clark Hill PLC

Brian Cenci, P.E., Eng., Inc.



Kelly and Cenci

With more than 3,600 miles of track, Michigan's railroads play a critical role in moving freight (and people) across Michigan. This begs the question of who should pay for maintaining the drains along railroad lines. Railroads often believe they

are exempt from special assessments. However, the laws vary from state to state. In *Doane v. Pere Marquette Railway Co.*, 247 Mich. 542 (1929), the Michigan Supreme Court affirmed that railroads are subject to drain assessments.

Chapter 14 of the Michigan Drain Code contains three sections that specifically pertain to railroads, including:

- Section 280.341: Drains along railroad; release of right of way; consent.
- Section 280.342: Drains across public utility right of way; mandamus to compel opening; costs.
- Section 280.343: Violation of act; penalty.

Another important piece of legislation pertaining to railroads is found in Section 211.7v of Michigan's General Property Tax Act (Act 206 of 1893). It states that railroads are exempt from property taxes.

BLENDING INNOVATION AND WILDLIFE IN DRAIN PROJECTS

Jon Morrison, PE, Deputy, Clinton County Drain Commission

Ryan McEnhill, PE, Senior Engineer, Eng. Engineering & Surveying

Cheryl Pitchford, PE, Fishbeck, Thompson, Carr & Huber



Morrison, Pitchford and McEnhill

Conservation plays an important role in the work of Michigan's county drain commissioners. By incorporating wildlife, recreational use and other improvements into drain projects, counties have greatly contributed to the preservation and restoration of Michigan's wetlands. Some of the ways innovative planning has helped habitats include:

- Addressing flooding, conveyance and channel stability concerns
- Improved aquatic and wildlife habitat
- Improved fish passage
- Facilitated natural processes – self-sustaining
- Reduced long-term maintenance costs
- Improved aesthetics and recreational uses
- Reduced pollutants

A variety of materials can be utilized to improve wildlife habitat along county drains—such as wood, stone and plantings. Bank revetments help curb erosion. Traditional ditch excavation addresses flooding and improves HGL. Adding water can alter vegetation to encourage new plants and increase wildlife use. Adding rock and green roofs offers practical solutions while adding aesthetics. Building a flood bench encourages plant growth and attracts wildlife. These are just a handful of the ways innovative planning can improve habitat.

In Oakland County, 1,500 LF of gabion was removed to improve the cross section and stabilize grading on the Caddell Drain, creating a flood bench. Wildlife access and wetland vegetation was greatly improved. See before and after images on the following page.

An advertisement for Fleis & Vandenberg. The top part features the company logo, which consists of a blue square with a white 'F' inside, followed by the text 'FLEIS & VANDENBRINK' in large blue letters and 'DESIGN. BUILD. OPERATE.' in smaller blue letters below it. Below the logo is a photograph of a landscaped area with green plants and a concrete curb. A red pickup truck is parked in the background. The bottom part of the advertisement is a blue banner with white text. On the left, it says '800.494.5202' and 'www.fveng.com'. On the right, it lists services: 'Engineering & Stormwater Management', 'Dam Inspections', 'Drain Assessments', 'Survey & GIS', and 'Environmental'.

Improve Cross Section and Stabilize Grade



Before – Gabion baskets; no floodplain access; uncontrolled grade; confined flows



After – Improved connectivity, capacity; riffles and pools stabilize steep grade

fiqh

In Clinton County, the Stroll and Grove drain improved flood control.

Blending Innovation and Wildlife via Regional Detention and Wetland Mitigation Stoll and Grove Drain – Clinton County Drain Commissioner

BEFORE



Before – Rural residential area with compromised outlet causing property damage

Eng.

AFTER

Blending Innovation and Wildlife via Regional Detention and Wetland Mitigation Stoll and Grove Drain – Clinton County Drain Commissioner

Through innovative and creative planning, drain projects can be designed to help preserve or restore Michigan's wetlands while ensuring that drains still have adequate capacity to handle the flow.



After – Controlled release outlet pipe from aesthetic pond and overflow structure

Significant wildlife habitat in a more stable environment



Eng.



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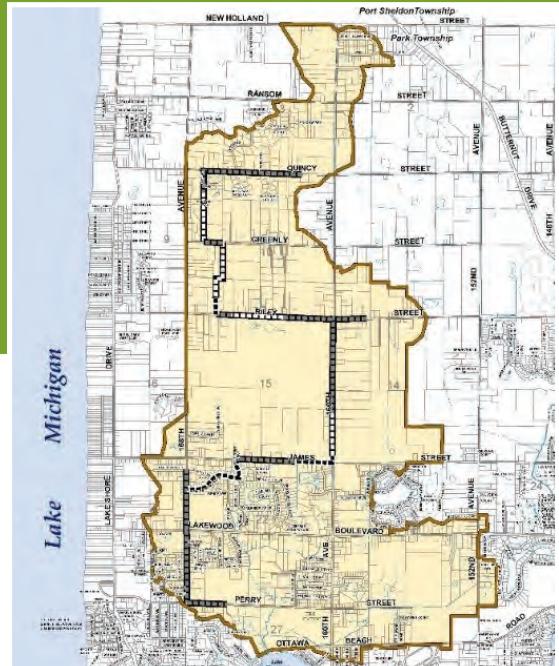
This project received an Honorable Mention in the 2016 MACDC Innovation & Excellence Awards.

FTCH worked with Ottawa County Water Resources Commissioner (OCWRC), Joe Bush, to design a project that brought to fruition his vision of a feasible and prudent alternative for the Park West Drain to benefit local stakeholders and protect the environment. FTCH was the primary consultant and performed all engineering related to water quality improvements and employing low impact development (LID) techniques, which also provided excellent drainage and flood control.

BACKGROUND

The Park West Drain Drainage District (District) is located in Park Township and comprises 3,800 acres (6 square miles). The Park West Drain outlets to Winstrom Creek, a tributary of Lake Macatawa. The Macatawa Area Coordinating Council (MACC), the privately funded Project Clarity initiative, and other local organizations (Nature Center, Macatawa Greenway) have been collaborating for years to improve water quality and meet the established requirements governing total maximum daily loads (TMDLs) in the Lake Macatawa Watershed. A U.S. Environmental Protection Agency (USEPA) Section 319 Watershed Management Plan (WMP) for the Lake Macatawa Watershed was approved in July 2012 to identify the proper strategy for water quality improvements and compliance.

Park Township has experienced slow, but steady, population and economic growth. As the



Park West Drainage District Map

Township’s master plan states, “Because of its many amenities, Park Township is one of the most desirable communities in Michigan in which to live and recreate.” According to the U.S. Census, Ottawa County’s growth rate has significantly outpaced state growth, indicating even during periods of slow or minimal growth, Ottawa County and particularly Holland Charter, Park, and Port Sheldon Townships have remained very attractive.



Previous conditions



Joe Bush, Ottawa County Water Resources Commissioner

The unique features of the project area are its proximity to Lake Michigan and Lake Macatawa, two heavily valued recreational areas, and also its optimum conditions for blueberry production.

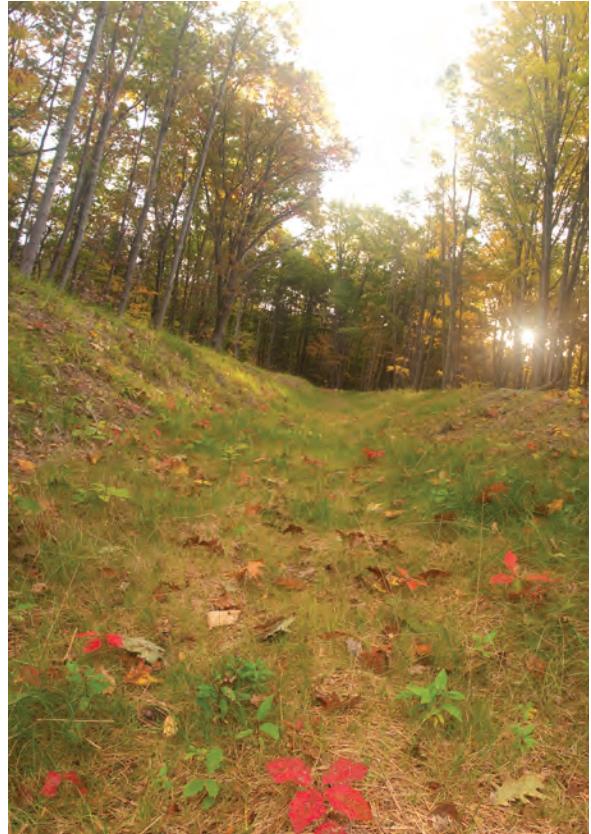
However, the District had been

plagued with stormwater management and water quality problems for decades. Prior to FTCH's involvement, the OCWRC office considered a conventional stormwater and storm sewer system, which discharged into Lake Macatawa. The initial project concept accompanied a \$7 million price tag and only addressed the District's flooding issues. Along with considerable cost, this conventional solution raised environmental permitting concerns to mitigate proposed increases in stormwater runoff. FTCH worked with Joe Bush to develop an alternative plan that offered a holistic, innovative approach to water resource management by providing stormwater and green infrastructure practices to protect water quality. FTCH's cost-effective alternative provided a comprehensive, long-term solution that addressed the District's flooding problems with vegetated swales to minimize stormwater infiltration and reduce runoff volumes.

PUBLIC INVOLVEMENT AND EDUCATION

This project highlights the cooperation between Park Township, OCWRC, FTCH, and community stakeholders.

Numerous public meetings were held during the design process with target audience groups and at a large open house type event. Specific stakeholder groups who provided direct design input included West Michigan Blueberry Growers, Leisure Acres and Tiffany Shores Homeowners Associations, West Michigan Land Conservancy, and Ottawa County Parks & Recreation. The project progressed with close collaboration with



Natural stormwater treatment methods blends seamlessly into the surrounding environment

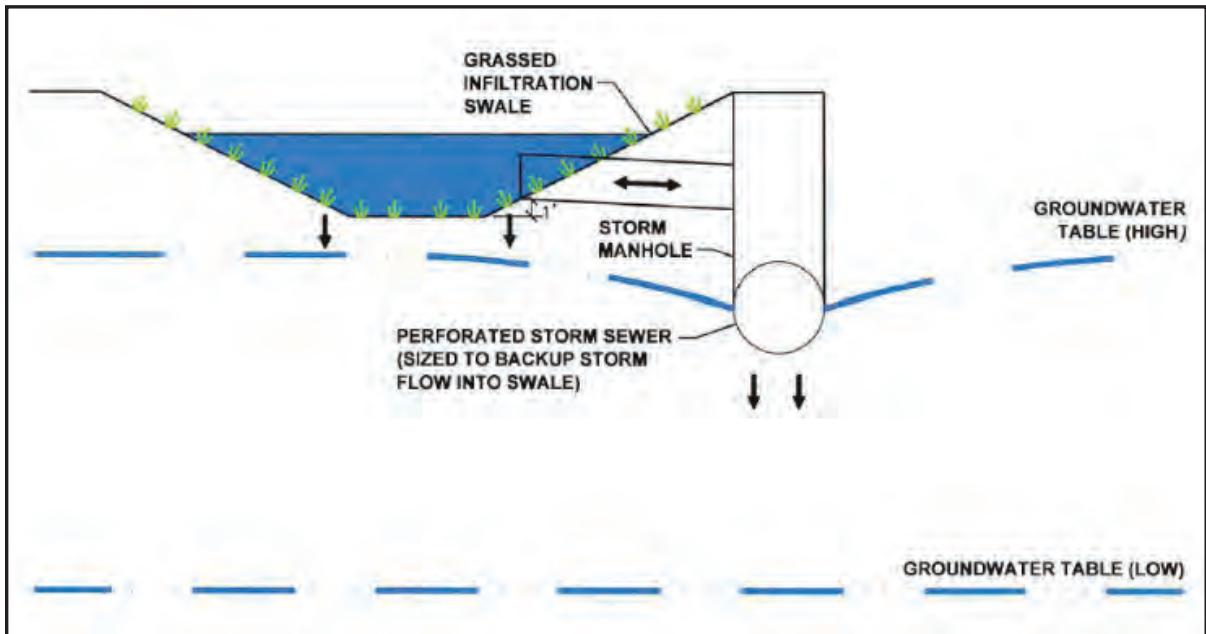
the Ottawa County Road Commission, within whose right-of-way much was drain was be constructed.

FTCH and Joe Bush also sought to keep the community informed about the proposed design that increased infiltration, as bioswales and vegetated swales would capture stormwater and allow slow infiltration. Residents had the opportunity to observe and learn about the importance of infiltrating stormwater and how their actions can directly affect stormwater runoff rates. Homeowners are able to replicate these practices on a smaller scale on their own properties and feel part of the solution and are not simply paying for a fix to the problem.

Ongoing presentations at various conferences and tradeshows are planned to illustrate how thinking outside traditional design can benefit local communities.

COST EFFECTIVENESS

One of the greatest advantages of the Park West Drain project was that final design provided a holistic and effective approach to flood protection for approximately half the estimated cost of the conventional project. Numerous best management



How a bio-swale functions

practices (BMPs) were used to accomplish this:

- Bioswales
- Vegetated swales
- Infiltration basins
- Perforated storm sewer/underdrain
- Sump line collection

While green infrastructure technologies are often overlooked for cost-related reasons, FTCH was able to sell the benefits of a holistic approach, which were roughly 62% of the original cost for the initial storm sewer design alternative. Al's Excavating of Hamilton, Michigan, worked to ensure construction was substantially complete a month ahead of schedule, and brought the project in under the construction budget. The green infrastructure technologies highlight the effectiveness of a comprehensive approach to water resource management.

These techniques are becoming increasingly necessary, and the experience obtained through this project will allow future projects to have a lower life cycle cost and more sustainable life span.

ENVIRONMENTAL AND WATER QUALITY BENEFITS

In addition to cost savings, the project reduced overall stormwater volume and enhanced water quality, was easier to construct than its more conventional counterpart, and offered the District operational and maintenance benefits. Specifically, annual load reductions to Lake Macatawa are

estimated:

- 10,564 pounds of total suspended solids
- 50 pounds of phosphorus
- 1,942 pounds of nitrogen

Turbidity, color, settleable solids, suspended solids, and deposits were all identified as properties that contributed to Lake Macatawa's non-attainment of designated use of warm water fishery and other indigenous aquatic wildlife. FTCH's green infrastructure techniques control more than 95% of stormwater runoff for greater than a 2-year storm, which will keep associated pollutants from entering waterways.

The project addressed high-priority action items with LID techniques and green infrastructure practices. Observations at the outfall have shown that the project has been successful at reducing nonpoint source pollution while minimizing flooding in the community.

COMPLEXITY + INNOVATION

For the past 35 years, the District experienced basement and surface flooding. Before the start of the project, stormwater was currently managed only around residential areas, mostly discharging to detention or retention ponds. Providing relief to those with flooded properties was a critical project component. Other considerations included:



Natural treatment of stormwater

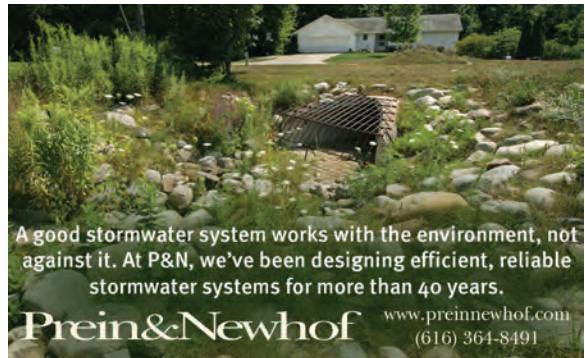
- Resolving water quality issues:
 - o Loss of wetlands.
 - o Improper use or over application of fertilizers.
 - o Lack of riparian buffers.
 - o Poor stormwater management.
 - o Impervious surfaces.
 - o Storm drains.
- Protecting natural and farm areas.
- Enhancing recreation, public access, fish and wildlife habitats, and open space.

Seven miles of bioswales were constructed along county roadways and within private easements. The function of the bioswales change depending on the groundwater cycle. Stormwater will infiltrate or be collected in the perforated underdrain during periods of low groundwater levels. The underdrain will help to control and lower groundwater levels when the levels exceed the invert of the pipe.

BMPs and green infrastructure techniques for LID do not require sizing for extreme rainfall events. A 2-year design will capture 95% of annual precipitation. The runoff is infiltrated into the groundwater in a smaller area than would be

needed for a detention basin. Grassed swales are proven to be the most effective manner to remove sediment and nutrients from stormwater, and double for stormwater conveyance and transport.

As a result of this project's complexity, the OCWRC received a \$1.73 million Innovation and Technology Grant from MDEQ, the only grant of this type awarded in Michigan. Grant requirements included water quality monitoring. A paired watershed approach will be applied to document the effectiveness of the new stormwater management system.



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IMPROVING ROADS AND BRIDGES ONE WETLAND PARCEL AT A TIME

By Denise Donohue, Director County Road Association of Michigan

County road commissions improve and maintain many miles of roadways across Michigan every year. When road or bridge projects impact wetland areas, mitigation is legislatively required.

While wetland mitigation has been the law for some time, with new state road funding on the way there are likely to be even more projects that will have more environmental impacts.

County road agencies have been concerned about the fiscal ability to mitigate wetland – and are quite enthusiastic when the Legislature and Gov. Snyder enacted the Local Wetland Mitigation Banking Bill (P.A. 246) this past June.

The Local Wetland Mitigation Bank statute will provide funding and state-level oversight for a wetland bank that will benefit county road agencies, cities and villages. It's another piece of the puzzle to improve Michigan road conditions going forward.

The new law, and new funding, are effective this October.

The first step will be to create a Local Wetland Banking Oversight Board that the law indicates will include three members from the County Road Association of Michigan, three from the Michigan Municipal League, one engineer, and one non-voting representative each from the Michigan Department of Transportation (MDOT) and the Michigan Department of Environmental Quality (MDEQ).

The bill also allows the hiring of a part- or full-time manager/engineer, which is likely to be one of the board's first action items.

The new law comes with an annual allocation of \$2 million, although the fund is capped at \$5 million, plus outstanding invoices.

These dollars allow the Local Wetland Mitigation Board to issue grants to county road commissions or municipalities that wish to purchase land, design, construct and manage a wetland bank.

While a few larger counties and cities presently have wetland banks available locally, the formal statewide Local Wetland Banking Oversight Board will assist many, many more cities, villages, and county road commissions and departments with

addressing important environmental concerns during any type of road work, maintenance or project reconstruction.

The goal of the program is to facilitate quality road improvements for the people of Michigan, while diminishing direct negative impacts to the environment. County road agencies want to ensure that wetlands, pivotal and natural “water filters” are utilized to mitigate environmental problems due to road improvements.

Beginning soon, county road agencies will decide where to go for wetland banks based on flood plain maps, ecosystem maps or what's available.

MDOT and DEQ will offer guidance on purchasing and engineering as county road agencies move forward on many road projects in the next few years.

It's an exciting time for county road agencies to be able to conduct projects in an environmental-friendly way that recognizes and protects local drainage concerns.

For more information on the Local Wetland Mitigation Banking Program, contact Ed Noyola, CRA Deputy Director at (517) 482-1189. Or email enoyola@micountyroads.org.





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OAKLAND COUNTY WATER RESOURCES CREATES WASTEWATER PSA

A group of employees from water resources and public services in Oakland County have created a new two minute video/public service announcement.

The goal is to educate folks about the costs and damage that result to our wastewater systems from flushing wipes and other non-flushable items down the toilet. These items are clogging systems which cause delays, backups, and expense.

The group used creativity and humor to get the message across, using local talent and in-house staff members who enjoy writing, public relations, and videography. The entire cost for this production was under \$1,000. Oakland County is making this video available at no charge. The PSA is now going statewide in Michigan and then across Ohio and the Great Lakes region.

View the video at the link below and consider sharing on your social media sites, posting the link on your website, and even sharing with your email

lists if you choose. Oakland County would love to hear any feedback, opinions or thoughts you may have on our creation.

The video is on YouTube at the following link: <https://youtu.be/KJzIFtvvVQ>

VIDEO COLLABORATORS:

- Craig Covey, Community Liaison and Communications Director, Oakland County Water Resources Commissioner's Office and Board Member of Pure Oakland Water
- Alyssa Atkinson, Executive Assistant, Oakland County Water Resources Commissioner's Office and Board Member of Pure Oakland Water
- Greg Eno, Public Information Director, Great Lakes Water Authority



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ASSOCIATE MEMBER NEWS



SPICER GROUP, INC. ANNOUNCES PROMOTIONS

Dixon
James W. Dixon has been promoted to Associate. Jamie has worked for Spicer Group since May of 1999, first joining our company as an intern and then working part-time until his graduation from Michigan State University with a bachelor's degree in Computer Science and Engineering in 2001. He began his full-time career as a Computer Technician, then a Technology Integrator, and now serves as the IT Manager for Spicer Group.

Spicer Group is also proud to announce the following promotions to Senior Associate: Aaron K. Bedford, David S. Boersma, AIA, Steven K. Roznowski, P.E., and James E. Ensign, P.E.



Bedford
Aaron joined Spicer Group's Marketing Group in March of 2004 as a Technical Writer. He was promoted to Marketing Manager in June of 2006 and currently holds that position, leading our great Marketing team. He holds a bachelor's degree in Writing/Journalism from Northern Michigan University, and was selected as an Associate in 2013.



Boersma
Dave joined Spicer Group in December of 2009 as a Project Architect and in 2014, was chosen as an Associate of the firm. He holds both a bachelor's degree and a master's degree in Architecture from Lawrence Technological University and is a Registered Architect in Michigan and seven other states. He is also a Registered Code Official and Inspector for the State of Michigan.



Roznowski
After interning with Spicer Group for three summers between 2006 and 2008, Steve joined Spicer Group as a Design Engineer in the Saginaw office's Water Resources Group in August of 2010. Over the years he became a Project Engineer, a Project Manager, and in 2013 was named as an Associate. When our Southeast Michigan office opened, Steve moved to work out

of the Monroe office and now currently serves as a Project Manager in our Dundee office. He is a Professional Engineer in both Michigan and Ohio, and has a bachelor's degree in Civil Engineering from Michigan Technological University and a master's degree in Civil Engineering from Colorado State University.



Ensign
James began his career with Spicer Group as an intern in 2008. After graduating from Michigan State University with a bachelor's degree in Civil Engineering in 2009, he joined Spicer Group full-time as a Design Engineer in our St. Johns office's Water Resources Group. In 2013, he earned his Professional Engineer registration and was named an Associate of the firm. He now serves as a Project Manager out of our St. Johns and Lansing offices.

CONTINUED SUCCESS RESULTS IN ADDITIONAL HIRING AT FLEIS & VANDENBRINK

Fleis & VandenBrink recently announced the hiring of nine new employees.

The additional staff pushes the Grand Rapids-based architectural and engineering firm to nearly 190 full- and part-time employees, solidifying its 2016 designation as a "Hot Growth Firm" and one of the "Best and Brightest Companies to Work For."

"We're continuing to grow our capabilities and strengths in all areas of our company," said F&V vice-president Paul Galdes, PE. "The talent we have added is exciting and it will certainly allow us to continue our growth and meet client expectations."

Several entry-level staffers were among the new hires. Three Engineer-in-Training (EIT) staff have been hired in Grand Rapids including Sydney Preston, Shawn Bates and Danell Smith. Bates and Smith are Civil EITs.



Preston
Preston joined the Process Group as a water / wastewater EIT. She is a Michigan State University graduate with a BSE in biosystems engineering. Preston's knowledge and experience of anaerobic digestion and biogas utilization while interning at a wastewater treatment plant will be useful at F&V as she works on digester projects in Kinross Township and Hillsdale and other Asset Management Plans.



Bates

Bates graduated from Hope College with a civil engineering degree. His internships with the Michigan Department of Transportation as construction technician will help the West Michigan Services Group as he'll be assisting in the design of municipal road and utility projects as well as inspecting construction projects.



Smith

Smith graduated from Michigan State University with a Civil Engineering degree. She'll help the West Michigan Municipal Group with the design and construction of road and utility projects.



Robison

Surveyor Jonathon Robison joins the Survey Group in Grand Rapids. The 2016 Ferris State University grad, who has a bachelor's degree in surveying, will be assisting with field operations including boundary surveys, construction layout and control and design/topographic surveys utilizing the full array of leading edge technologies and equipment.



Walquist

Barrett Walquist was hired as a staff geologist in Grand Rapids. He has a bachelor's degree in Natural Resources Management from Grand Valley State University and experience working in the environmental and engineering sectors. His background in geology and technical skills in CAD, GIS and geotechnical software will benefit the Environmental Group where he'll help with site assessments, remedial investigations, leaking underground storage tank closures and associated compliance sampling.



Casper

David Casper, PE, was hired in the Traverse City office as a Staff Engineer. He earned a bachelor's degree in civil engineering at Montana State University and a master's degree in business administration from the University of Mary, Bismarck, N.D.

Capser's experiences in project development, design and stormwater management, hydrology, site planning and engineering design will help him as a project engineer.

Two administrative assistants were added in Grand Rapids. Shelly Valentine has joined F&V Operations & Resource Management (FVOP) Group. Lisa Smith will assist the Land Development Group. Both Valentine and Smith have previous engineering firm experience.



Valentine

Valentine will assist the FVOP safety program and handle records and billing. Her knowledge of the Pinnacle Series software program will also be beneficial.



Smith

Prior to joining F&V, Smith spent a decade managing an insurance restoration company in Grand Rapids. She was also operations manager and executive assistant at a historic downtown church. Smith's high degree of organization and coordination will help with communicating a variety of technical services that F&V provides from architecture through construction and site design.

Elizabeth Peterson, a former paralegal, joined the Grand Blanc office as a part-time administrative assistant. The notary public earned a two-year degree in business management and paralegal studies from Baker College.



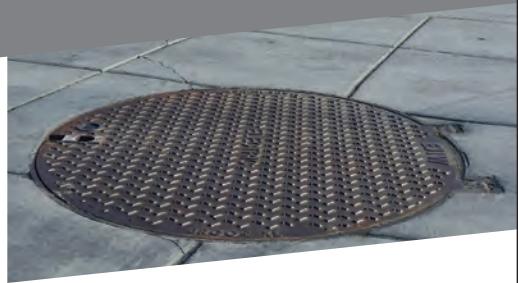
Peterson

Peterson's experience proofreading documents and researching records for a local law firm will help her at F&V with preparing project submittal packets, bid tabulations, projects specifications and project research.

In 2016, F&V was named one of West Michigan's "101 Best and Brightest Companies to Work For," and a Zweig Hot Growth Firm. F&V ranked 70th among the fastest-growing architecture, engineering, planning and environmental consulting firms in the United States and Canada and fourth of Michigan firms



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- 2012 Watson & Watson Branches Drain, ECDC - Honorable Mention
- 2011 Gier Sand Creek Drain, LCDC - Honorable Mention
- 2008 Towar Rain Garden Drain, ICDC - Award Winner
- 2004 Carrier Creek Drain, ECDC - Award Winner

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**Michigan Association of County Drain Commissioners
2017 Awards Program • Official Entry Form**

Applications must be received by 5:00 p.m., November 7, 2016

Information supplied on this form will be used to print awards and/or certificates. Please type or print the project name and the names of firms EXACTLY as they should appear on the award.

Award Winners must supply project abstract and photos electronically so that they can be posted on the MACDC website (www.macdc.net.)

Note: Engineers, Contractors, Suppliers, or Consultants must be MACDC Members or Associate Members to be listed on the award.

Project Name:

Submitted by:

Applicant's Name _____
Street Address _____
City/State/Zip _____
Telephone _____
Fax _____
E-mail _____

Engineer(s) (if any)

Contractor(s) (if any)

Other Firms or Individuals

Drain Commissioner's Approval

I approve this submission to MACDC's 2017 Awards Program. The project was completed under my authority or through the authority of a Board of which I am a member. To my knowledge, the entry meets all program requirements.

Name _____
Office _____
Signature _____

Please submit a separate application for each entry. The \$50 entry fee must accompany each application.

Make checks payable to:

Michigan Association of County Drain Commissioners

MACDC 2017 Awards Program Rules and Procedures

Purpose and Goals

This Awards Program aims to:

- Recognize creative and innovative accomplishments of Members and Associate Members of the Michigan Association of County Drain Commissioners (MACDC).
- Promote public awareness of the activities and contributions of MACDC, its Members and Associate Members.

Eligibility

Any MACDC Member or Associate Member may enter this Awards Program. Drain Commissioner(s) and/or Associate Member(s) may submit projects jointly or separately. Associate Members submitting separately must obtain the signature of the Drain Commissioner of record on their Entry Form.

Award Categories

MACDC's panel of judges will review submittals. Two projects will receive an *Innovation and Excellence* award. MACDC will provide one award for each winning project; recipients may purchase additional copies of the award.

MACDC may also award Honorable Mention certificates to a maximum of two projects.

Schedule

Application Packets Due: 5:00 p.m. on November 7, 2016

Notification of Winners: on or before January 2, 2017

Awards Presentation: Wednesday, February 15, 2017

General Criteria

1. All entries must be submitted in accordance with the rules outlined in this document.
2. The project must have been conducted under the direct authority of the Drain Commissioner or through a Board of which the Drain Commissioner is a member.
3. A Member or Associate Member may enter as many qualified projects as they wish.
4. Projects that have received awards from other organizations may be entered.
5. Projects must have been completed and in use between April 1, 2014 and December 31, 2016.
6. Entries must comply with Submission Guidelines section of this document. Failure to comply may disqualify an entry. Please read the Guidelines thoroughly.
7. MACDC Awards Committee reserves the right to determine entry eligibility.
8. MACDC Awards Committee determines the Award Category based on submitted information.

Fees

An entry fee of \$50 is required with each submission, and is used to defer program expenses. Make checks payable to: **Michigan Association of County Drain Commissioners.**

Judges and Judging Criteria

A panel of three qualified judges will evaluate entries based on the work completed by the entering organization(s). Finalists and winners are selected based on overall project excellence. Judges will evaluate and compare projects based on the following.

Judging Criteria:

1. Public involvement and education
2. Environmental and water quality benefits
3. Use of new materials
4. Use of new technologies
5. Innovation
6. Complexity
7. Cost effectiveness

Note: Projects need not contain all seven of the above criteria.

Submission Guidelines

Each entry must include:

1. Completed Official Entry Form; forms must be signed by the Drain Commissioner with jurisdiction over the project.
2. A brief narrative describing the project as it relates to the Judging Criteria previously listed. The narrative should not exceed five pages. Submit at least 3 photographs; additional photographs and other relevant material may also be submitted. The complete application packet must not exceed ten pages. Application packets should be bound or stapled – please do not use three-ring binders.
3. One original and three copies of all materials.
4. \$50 Entry Fee (Checks payable to Michigan Association of County Drain Commissioners)

Due Date: Received by 5:00 p.m., November 7, 2016

Mail Application Packets along with Entry Form to:

MACDC Awards Committee
120 N. Washington Sq., Suite 110A
Lansing, MI 48933

Public Relations

Winning Projects are honored at MACDC's Winter Conference, and are featured in Pipeline Magazine. The Awards Committee will issue a press release to publicize the Awards Program and award-winning projects. Project descriptions will be posted on the MACDC Website (www.macc.net.)

Special Requirements

All entries will be recognized at the Winter Conference. MACDC will host a display area. All applicants, regardless of whether they receive an award, may present graphic panels for their projects. Applicants provide a 32" x 40" graphic panel mounted on foam core. The panel should include text such as the Project Title, Drain Commissioner's Name, and a brief list of project highlights. Type size no smaller than 18 point is recommended. Photos, other graphics, and captions that illustrate project features should also be incorporated. The finished graphic panel should "tell a story" about the project. MACDC's Awards Committee recommends simple, inexpensive production for these panels.

Award Winners will be invited to make brief slide presentations highlighting their projects at a conference session on Wednesday, February 15, 2017. Further information will be provided with the notification of award (on or before January 2nd.) Due to time constraints, slide presentations cannot be made for projects receiving Honorable Mention.

Questions? Contact:

James Davis, P.E., Awards Program Chair, at
517.373.6781 (email: davisj19@michigan.gov)

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Northwest District Meeting
Kent County

OCTOBER 14, 2016

Southwest District Meeting
Hastings

OCTOBER 21, 2016

Northeast District Meeting
Lapeer

NOVEMBER 3, 2016

Southeast District Meeting
Madison Heights

JANUARY 12 – 13, 2017

New Drain Commissioners School
Hampton Inn and Suites, Okemos

FEBRUARY 15 – 17, 2017

MACDC Annual Winter Conference
Grand Traverse Resort, Acme

MARCH 14 – 16, 2017

County Road Association's Highway Conference
Lansing

MARCH 27 – 29, 2017

Michigan Association of Counties Legislative
Conference
Radisson, Lansing

JULY 19 – 21, 2017

MACDC Annual Summer Conference
Crystal Mountain Resort, Thompsonville

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