

Volume 26, No. 1 | Spring 2017

PIPELINE

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS

MANAGING MICHIGAN'S WATER RESOURCES SINCE 1899

RAIN GARDENS

*Washtenaw County Program
Utilizes Grassroots Efforts*

*Winter Conference Recap
Including New Intercounty Drain Procedures*

*New Macomb County Public Works Commissioner
Hits the Ground Running*



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PRESIDENT’S MESSAGE

DAVID THOMPSON
Monroe County Drain Commissioner



Hello all,

First, it is a great honor to be selected as your MACDC President for 2017-2018. I have come to know many of you through my work in the Monroe County Drain Commissioner’s Office over the past couple decades, and await the opportunity to collaborate with more of you. I look forward to the challenges we will face together, and celebrating the successes that have come from those challenges.

The elections are over. We have transitioned Donald Trump, President-elect, to the role of President Trump. We have transitioned new Drain Commissioners into our ranks and welcomed back the faces of returning Drain Commissioners. So now, we begin the restructuring of our ranks, and filling of our committees. While we transition, we must remember that each of us has a role in this association, we each have a story to tell. Whether your county is the largest or the smallest, you have something to contribute. I often reflect in awe of what we are able to accomplish, and tip my hat to the strides we have made in water infrastructure development, advancements in water management, and governance of our municipalities.

We have big work ahead of us. With the State’s focus pinpointed on infrastructure and wetland mitigation, the work we do will be in the spotlight. We must partner together to reach beyond the expectations of our constituents. Together, we will align our counties with the great state of Michigan’s goals as outlined in the State of the State Address. We are on the cusp of changing movement. How lucky we are to be at the helm.

In closing, as the incoming MACDC president, I am reminded of a quote from Theodore Roosevelt, “Whenever you are asked if you can do a job, tell ‘em, ‘Certainly I can!’ Then, get busy, and find out how to do it.” This pearl of wisdom can apply to each of us individually, and collectively. We are lucky to be surrounded by experience. Use your resources, align your goals, and do it. Thank you to you all.

All the very best,

David

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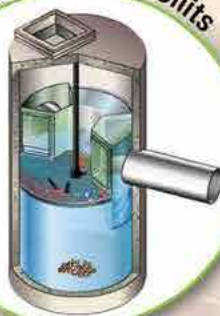


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STAFF SPOTLIGHT

Drain Commissioners, Water Resources Commissioners, and Public Works Commissioners are responsible for administering laws involving flood protection, stormwater management, and soil erosion. Their specific duties vary significantly from county to county and may include drain maintenance, lake improvement, lake level control, review of stormwater drainage plans, and operation of sanitary sewer facilities, to name a few.

The staff spotlight is an opportunity for each of us to learn more about the individual staff members on both a personal and professional level. These individuals are dedicated to serving the public and helping the drain/water resources offices run as smoothly and efficiently as possible. Please take a moment to read their stories.

If you would like to see a particular individual featured in an upcoming Staff Spotlight, please contact Michelle LaRose (mlarose@livgov.com) or Hillary Walilko (walilko.h@gcsionline.com).



BRENT SCHOLTEN
DRAIN MAINTENANCE SUPERVISOR
ALLEGAN COUNTY
YEARS AT THE DRAIN OFFICE: 11

The drain maintenance supervisor position has changed a lot since I started in 2006. In the beginning, I supervised our drain maintenance technician and the inmate work crew (DEBTS) for a majority of the week, and followed up on drainage complaints/concerns and inspected drains the rest of the week. Today, I still supervise our drain maintenance technician and DEBTS, follow up on drainage complaints, and inspect county drains on a rotational inspection/maintenance schedule, but now I also determine what type of maintenance and/or repairs are necessary on property owner drainage complaints/concerns and routine maintenance, put together the maintenance/repair proposals and inspect during and following completion. In addition, I'm a licensed storm water operator and SESC inspector. This is necessary because we are our own APA and do SESC inspections on all of our drain maintenance and a majority of our larger engineered petitioned projects. Lastly, over the last 3-4 years, I have been doing more construction inspection on our larger petitioned projects. The present Commissioner, Denise Medemar, feels it's important to have "boots on the ground" a couple days a week on these projects to ensure our constituents' concerns and Allegan County's high standards are met. Working in conjunction with great engineering firms has made both my and our office's job much easier.

One of the things I enjoy most about my job is the one-on-one interactions with property owners, including



Brent conducts an inspection as part of the lake level control structure re-build project at Miner Lake.

the initial onsite meeting to go over their concerns, designing the necessary repairs/maintenance to help them with their drainage issue, and seeing the end results. There are not many jobs out there where you get to go through the entire process and see people happy with the outcome.

As many drain offices know, we run into a lot of drainage issues where there is damage to family homes. Dealing with these situations is one of the most challenging aspects of my job. In some instances, we have jurisdiction and can help them out, but others you can't directly help due to lack of jurisdiction. These are difficult, especially when you're standing next to an emotional property owner who has to move their family out of their home due to flooding or a high water table in the area causing severe ponding of water in or around their home. In these situations, all you can do is give information on where they could find some type of assistance, etc.

I am a high school and college graduate. During college, I worked for a construction/excavation contractor owned by an extended family member.

While working there, we started doing work for the Ottawa, Kent and Allegan County drain offices on maintenance projects. Enjoying that type of work, I stayed there after college and learned a lot over my 17 years in the drain maintenance/excavation/construction field. In 2006, I was hired as the Drain Maintenance Supervisor for the Allegan County Drain Commissioner. Since then I have been able to put my years of experience to work to help the people of Allegan County and adjacent counties with their drainage issues.

I enjoy keeping busy. During the spring and summer time, I love working on my lawn and landscaping. Some may say I'm a little picky, but I just enjoy the end results of a well-manicured lawn. I also enjoy boating, riding bikes, wood working, doing home improvements and being a little bit of a handyman for friends, family or whoever may need it. In addition, I volunteer at church and love hanging out with my family and friends.

STEVE HASBROUCK
SANITARY FACILITY SUPERINTENDENT
LIVINGSTON COUNTY
YEARS AT THE COUNTY: 29.5

Much of what I have done over the last 29 ½ years has been an adventure in learning and problem solving. There is very little in the collection and treatment of wastewater that would be considered easy. The challenge of facing each and every day with a happy heart is my main goal in life.

I started with the Drain Office as a general laborer at age 31. I graduated from Howell High School in 1974 and went to work delivering heavy equipment tires and learned the tire-man life. At 20, I went to work for Mobil Oil Exploration and Producing in search of oil and natural gas. I was trained in a multitude of tasks: mountain climbing, swimming across rivers and irrigation channels, using pack animals. I learned a lot about people from across our country and south of our border. I also learned much about geography, explosives, the environment, safety, and surveying. This was a ten-year portion of my life.

Upon being back in Michigan, when I met my wife and later the mother of our four children was when I applied for a job that mentioned easement work.

I thought it was related to surveying; it turned out to be cutting brush and swimming (scuba diving) in lagoons. (There is more to the scuba story but will have to save that for another time.) In 1989, I was asked to go look at a project that was being built; it turns out there were three separate sanitary sewers which all were completed at the same time. I was cordially told I was going to operate all of them. First, though, I had to inspect virtually every home and business sewer connection over the next few years. It is what I would call on-the-job training.

I was trained in the soil erosion realm, but my main focus has been on construction and operation of sanitary sewers. Currently, my role is the successful operation of the Livingston Regional Sewer System, which is comprised of a collection system that spans two townships. The system consists of several separate low pressure sewer systems and an extensive and growing collection



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system with very long pressure force mains. Odors (H2S) were so severe that even high quality stainless steel would disappear relatively quickly. Our operations team was extremely persistent in their efforts to tackle and eventually solve this problem. That was one of the more recent accomplishments that I am glad to have been a part of.



Steve (R) snowboarding with two of his children

I currently am at least considering an exit plan for this career. My youngest son has two more years of college and two others should complete their education after next year. I currently work hand-in-hand with three other operators with whom I am in the process of sharing as much of my experience as possible. Much of that involves giving them the opportunity to problem solve and communicate with as much of the public as possible. The growth that we have seen within our county has clearly been the biggest challenge that I have experienced. With current economic growth picking up again, there will be an increase in pressure to make good decisions during the planning and construction of new infrastructure, especially where it will be challenging to fix problems after installation because of site constraints, depth of sewer, or other reasons.

My current title is incidental. Some days I push a broom, while other days I may have to address a gathering of elected officials or the public with very real issues. I think that is why I have enjoyed this career. They even pay me for this opportunity to serve the community in which I live. My hobbies include doing road trips, especially when it entails going snowboarding. I have been a vegetable gardener and enjoy doing yard work. I find it relaxing. It is close to home and works well for being on call for half of my life.



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WINTER CONFERENCE RECAP

Asset Management Panel

Carrie Ricker Cox, Oakland County Water Resources



Ricker Cox

The intent of asset management is to ensure the long-term sustainability of the utility while meeting a required level of service in the most cost-effective way. However, assets have a life cycle, so it's necessary to recognize when it is time to repair, replace or rehabilitate an asset. Service rates, largely determined by

asset costs, must be based on knowing what capital and maintenance programs will look like years down the road. Simply setting a calendar frequency of maintenance is not necessarily the best way to maintain your assets. So what can we do?

To develop effective long-term strategies and methods for managing their assets, Oakland County Water Resources Commission (WRC) recently sought and was awarded a number of SAW grants to help manage their drainage districts, disposal systems and the county at large. The grants helped WRC to better manage the county's infrastructure, which includes:

- Three interceptor systems and the City of Pontiac
- 15 sewer and 18 water systems
- 460 drainage districts
- Drain facilities
- WWTPs and community septic systems
- Retention treatment basins
- Sanitary retention basins

In order to handle this large number of assets, WRC developed a system to track assets, asset health and system budgets. They subsequently formed a "Common To All" (CTA) SAW Grant, which allowed them to work in a uniform process that would track assets, asset distribution and system budgets. The plan was to maintain their program long term, moving away from a calendar-based maintenance program and into a need-based program (run hours, repair history, condition, consequence, etc.).

GOALS OF THE "COMMON TO ALL" SAW GRANT:

- Develop a cost-effective and results-oriented asset management program (AMP) that will consider all sanitary and storm water assets operated and maintained by WRC
- Wastewater and storm water AMPs as well as storm water management plans
- Improvements for optimization of O&M strategies
- Templates and condition assessment tools to standardize inspections and asset management planning for all communities and all assets
- Software for financial modeling and risk (RIVA)
- Software for CCTV inspections and FOG program
- Rate methodology review and template

Using their asset management system, WRC is able to track 486 funds and estimate reserve expenses needed for inspections, rehabilitation, replacement and rebuilds. Location-based data management is used to facilitate strategic decision-making and share data across ten county agencies and 62 local cities, villages and townships.

WHAT DID ALL THIS COST?

- Common to all SAW grant funding awarded: \$2.4M
- WRC community (SDS, DD, WWTP & RTB) SAW grant funding awarded to date (rounds 1-4): \$24.95M
- Total WRC related SAW grant funding awarded: \$30.1M
- Total WRC related community match: \$3.6M

NEXT STEPS:

- Continue to add sewer systems as they complete SAW grants
- AMPs to be submitted to DEQ by January 2018 for water systems serving more than 1,000 customers
- Organize group to support process
- Cost is about \$750,000 per year

LESSONS LEARNED

- Communication is key
- Need to clearly identify levels of involvement from staff
- Do not rush implementation
- Do not try to do too much at once

2D Stormwater Modeling Applications

Derek St. John, PE, CFM

Samir Matta, PE, Lockwood, Andrews & Newnam, Inc.



St. John

When the capacity of those drains is exceeded, water begins flowing over and flooding is possible. That's when the second component of stormwater modeling, the surface flow, can be coupled with the one-dimensional (the pipe and drain) to give us two-dimensional (2D)



Matta

stormwater modeling. Combining the two gives us a powerful analytical tool to permit an improved understanding that leads to effective solutions – so that we won't oversize or undersize.

TRADITIONAL ONE-DIMENSIONAL MODELING

- Consists of pipes and channels
- Goes in one direction only

TWO-DIMENSIONAL MODELING

- Adds surface flow
- Is a more accurate means to simulate stormwater runoff
- Has been used in other parts of the U.S. for ten years
- Is used to understand flooding problems and the flow of water over land
- Is possible due to the availability of high resolution topography

Two-dimensional stormwater modeling is a more accurate means to analyze water runoff by identifying inadequate drains, velocity, flow

direction and flood risk. Accurate simulations can be created that include drain pipes, catch basins, inlets, open drains, structures (such as homes and businesses), etc. Two-dimensional modeling is particularly helpful when using visual simulation at public meetings. It is also useful in determining and allocating funding.

"It has been estimated that over 50% of flooding is coming to wall structures outside of the flood plain. They flood because the water is having a tough time getting to the flood plain—getting to our open drains. 2D modeling helps us understand that and address those issues," says Derek St. John of Lockwood, Andrews & Newnam, Inc.

Aerial topography (LiDAR) is essential input that forms the base in 2D modeling. Whatever data is available can be utilized and incorporated into the model – GIS systems, models, etc. Luckily, the majority of the State of Michigan has recent LiDAR coverage available at little to no cost. If no topography is available, there are methods to analyze the overland flow to understand what an extreme flooding event might look like.

Over the last seven years, Lockwood, Andrews & Newnam, Inc. has perfected what they call a "rapid assessment" approach, where rainfall is directly applied to the surface. So rather than delineating an area, the surface defines how much water is conveyed to that collection point.

WHY USE HIGH-LEVEL RAPID 2D ASSESSMENT?

- For initial problem evaluation
- As a planning tool
- 90% of the value for a detailed study for 10% of the effort (90/10 rule)
- Master plan applications

HOW DOES IT WORK?

- Leverage available data
 - LiDAR data
 - GIS information
- Rainfall on mesh
- Regional results comparable with detailed studies
 - 90/10 rule in effect

MODEL COMPARISON

Method	Software	Advantages	Limitations
Static or Steady State Analysis	<ul style="list-style-type: none">WinStormStormCADHEC-RAS	<ul style="list-style-type: none">Ease of useStandard productResults reporting is simple and easy to interpret and evaluateLimited data requirements	<ul style="list-style-type: none">Complex systemsNo overland flowResults reporting
Dynamic with 1-D Overland Sheetflow	<ul style="list-style-type: none">SWMMXP-SWMMICPRInfoWorksHEC-RAS	<ul style="list-style-type: none">Complex storm sewersPump stations and detentionLimited data requirements1-D overland flow	<ul style="list-style-type: none">Complex analysis – specialtyLimited overland flowLimited results reporting
Dynamic with 2-D Overland Sheetflow	<ul style="list-style-type: none">InfoWorksXP-SWMMSOBEKHEC-RAS 5	<ul style="list-style-type: none">Improved overland sheetflowImproved storage accountingAdditional calibration optionsImproved communications tools	<ul style="list-style-type: none">Complex analysis – specialtyData requirementsInitial up-front cost

Two-dimensional modeling has proven itself to be accurate and comprehensive, while allowing a full understanding of complex water flow. It combines traditional methods with cutting edge technology to create calibrated simulations and confidence in solutions.

Habitat Projects on County Drains in Macomb County

Lynne Seymour, Environmental Engineer, Macomb County Public Works
James F. Burton, P.E., LEED AP, CFM, Hubbell, Roth & Clark, Inc.



Seymour

In 1988, the Clinton River Watershed was designated as an official “Area of Concern” (AOC). Eight “beneficial use impairments” (BUI’s) were given as reasons why the area needed restoration:

- 1) Restrictions on fish and wildlife consumption
- 2) Eutrophication or undesirable algae
- 3) Degradation of fish and wildlife populations
- 4) Beach closings
- 5) Degradation of aesthetics
- 6) Degradation of benthos
- 7) Restriction on dredging activities
- 8) Loss of fish and wildlife habitat

In 2010, The Great Lakes Restoration Initiative was launched to accelerate efforts to protect and restore the largest system of fresh surface water in the world. Five years later,



Burton

the Environmental Protection Agency committed \$20 million through the Great Lakes Restoration Initiative to fund the following 11 habitat projects in Michigan:

- Clinton River Spillway Habitat Enhancement
- Partridge Creek Commons
- McBride Drain
- Red Run Habitat Enhancement Master Plan
- Clinton River Corridor Restoration
- Shelby Township Stream Bank Stabilization
- Wolcott Mills Metropark Wetland Restoration
- Harley Ensign Coastal Wetland Restoration
- Galloway Creek Fish Passage
- Galloway Wetland Restoration
- Sylvan Glen Golf Course Habitat Restoration

THE MCBRIDE DRAIN PROJECT called for extensive habitat restoration that required the removal of vegetation, grading and other maintenance activities that would increase the available habitat for wildlife in this stream corridor. The restoration of approximately 20,000 feet of this drain would allow for the development of a more traditional stream. Beneficial outcomes include:

- 20,000 lineal feet of enhancement and restoration
- 10 acres of plant re-vegetation
- 1,500 feet of shoreline naturalization
- 10 acres of invasive species control
- 10 acres of riparian buffer

Restoration continues, with a total of 917 large trees removed, four acres of land cleared and 21,200 linear feet of bank cleared.

THE PARTRIDGE CREEK COMMONS PROJECT will restore four parcels of publicly owned vacant land that was previously a golf course. It aims to diversify habitat through open channel restoration and in-stream habitat restoration. Beneficial outcomes for Partridge Creek include aquatic and terrestrial habitat restoration of 52 acres, which includes 5,500 lineal feet of open channel restoration, five acres of wetland restoration and invasive species control.

THE CLINTON RIVER SPILLWAY HABITAT RESTORATION PROJECT called for creating off-channel spawning habitat, gravel substrate improvements, in-channel wood and aquatic vegetation (for northern pike and yellow perch) and improvements to the density and diversity of native plant growth in submergent, emergent, riparian,

and upland areas. Beneficial outcomes include:

- 96 acres of Invasive species control
- 2.5 acres off-channel aquatic habitat
- 4,600 feet of bank stabilization
- 44,250 square yards of riffle/glide area
- 17,000 square feet of marsh enhancement
- 1,500 feet of armored shoreline softened
- Two fishing piers to reduce bank erosion

“Investing in the Clinton River watershed is critical to the health and conservation of our waterways and wildlife habitats. This support for our counties, townships and cities will help keep our waters clean and healthy for generations to come.”

—U.S. Senator Debbie Stabenow, Co-chair of the Great Lakes Task Force

2017-2018 Legislative Preview

Deena Bosworth, Michigan Association of Counties

Michigan's 2017 legislature is comprised of 63 Republicans and 47 Democrats in the House, 25 of whom are former county commissioners. In the Senate, there are 27 Republicans and 11 Democrats, 11 of whom are former county commissioners.

HOUSE LEADERSHIP MEMBERS

- Speaker: Tom Leonard (Clinton)
- Speaker Pro Tempore: Lee Chatfield (Emmet)
- Majority Floor Leader: Dan Lauwers (St. Clair)
- Minority Leader: Sam Singh (Ingham)
- Minority Floor Leader Christine Greig (Oakland)

SENATE LEADERSHIP MEMBERS

- Majority Leader: Arlan Meekhof (Ottawa)
- Asst. Majority Leader: Goeff Hansen (Oceana)
- Majority Floor Leader: Mike Kowall (Oakland)
- Minority Leader: Jim Ananich (Genesee)
- Asst. Minority Leader: Steven Bieda (Macomb)
- Minority Floor Leader: Morris Hood (Wayne)

LEGISLATION OF INTEREST IN 2015-16

INCLUDED:

HB 4656: NOTICE (PA 171 OF 2016)

- Requires a Drain Commissioner to give a property owner at least seven days' notice by first-class mail before entering his or her property for any excavation or tree removal

HB 4758: BONDS (PA 27 OF 2016)

- Allows for the use of mandatory redemption (terms) bonds for drain projects

SB 1117: APPOINTMENTS (PA 521 OF 2016)

- Removal of population requirement of 2 million to allow a County Executive the ability to appoint to a member of the drainage board

HB 4747: ADVERSE POSSESSION (PA 52 OF 2016)

- Simplifies statutory language on adverse possession
- Municipalities are not subject to claims whether action is brought by or against municipalities

HB 5991: STORMWATER UTILITIES (DIED)

- Gives local units the ability to establish a stormwater utility ordinance
- Purpose is to pay for upgrades to protect against economic losses, property damages, threats to safety and damage to the environment from flooding

HB 5282: STORM LIABILITY (DIED)

- Clarify the liabilities for local units during and after large rainfall events
- Rain events 1.7 inches or more in any one-hour period or 3.3 inches in any continuous 24-hour period would give immunity
- Immunity would only apply if the local unit's system has been designed according to state standards in place when constructed
- Reintroduction expected in 2017

HB 5943: ELECTIONS (DIED)

- Allow nonpartisan elections for townships and county officers
- Allowed in counties with 75,000 or fewer residents
- County Board of Commissioners would adopt via resolution

SB 687 BOARD POST (DIED)

- Allow drain commissioner of highest aggregate apportionments to choose to serve as drainage board secretary

HB 5279: CONSOLIDATION AUTHORITY (DIED)

- Gives drain district consolidation authority to villages

HB 6014: LAND REMOVAL

- Allows for the addition or removal of land from inter-county drainage districts

2017-2018 LEGISLATION

HB 4002: PUBLIC NOTICES

- Creates multi-year phase-in for digital notices
- Creates tiered system for notices
- Requires local unit to have digital archive of notices starting in 2025

HB 4100: STORMWATER UTILITY

- Gives local units the ability to establish a stormwater utility ordinance
- Purpose is to protect against economic losses, property damages, threats to safety and damage to the environment from flooding

FEDERAL ISSUES

TAX-EXEMPT MUNICIPAL BONDS

- From 2003-2012, counties, localities, states and state/local authorities financed \$3.2 trillion in infrastructure investment using municipal bonds
- Such bonds in use since 1913
- Urge Congress to preserve tax-exemption for #MuniBonds to support federal-state-local partnership for our nation’s infrastructure

Improving Relationships with County Drain Commissions

Ediberto (Ed) Noyola
County Road Association of Michigan



Noyola

The County Road Association of Michigan (CRA) represents the interests and concerns of Michigan’s 83 county road agencies.

Recently, the County Road Association of Michigan (CRA) set an important goal — to improve their relationships with sister associations,

such as the Michigan Association of County Drain Commissioners, the Michigan Townships Association, the Michigan Association of Counties, the Michigan Municipal League and Farm Bureau.

As part of the goal-setting process, CRA took a hard look at their priorities. At the top of that list was safety—to ensure that whoever was in the right-of-way would be safe. Recognizing the broad scope of this, they concluded that they were no longer “just road and bridge guys,” but “right-of-way managers.” While their priority is safety first, they still need to remain sensitive to property owner concerns. For example, CRA is currently

concerned about the possibility of cell phone companies using poles that exceed the 40-foot standard. Seventy and 120-foot poles would be a serious road safety concern.

TRANSPORTATION FUNDING FOR MICHIGAN ROADS

The new road revenues, which took effect January 1, 2017, are the first increase in state road funding in 20 years and include:

- A 7.3 cent increase in state gas tax to 26.3 cents, all of which is Constitutionally-dedicated to the Michigan Transportation Fund (MTF) (Note: Michigan also levies sales tax at the pump, which most states do not; these taxes do not go into the MTF);
- A 20 percent increase in registration fees for passenger vehicles and most commercial trucks, all of which is Constitutionally-dedicated to the MTF;
- An increase in tax on diesel fuel, bringing it equal with the state gas tax on fuel at 26.3 cents, and Constitutionally-dedicated to the MTF; and
- New taxes on alternative fuels and registration surcharges on electric vehicles.

The three main categories of fee and tax increases taking effect with the New Year are the gas tax increase which is expected to generate \$236 million in new funds in 2017; vehicle registration fee increases which are expected to generate \$155 million in new funds in 2017; and the diesel parity increase, which is expected to generate \$69 million in 2017. Altogether, an estimated \$460 million of new monies will be directed to Michigan roads and bridges by the end of calendar 2017. Unfortunately, County Road Association members won’t receive any of the new road revenue until March, because the state is always on a two-month delay for when they collect the revenue to when they distribute the revenue.

CRA members will use the new tax revenue to make improvements that extend the life of pavement or improve a bridge or pavement. To learn more about CRA and Michigan’s roads, visit <http://micountyroads.org/>.

Assessments and Apportionments

Doug Enos, Midland County Drain Commissioner
Michael Quaine, P.E., BMJ Engineers & Surveyors, Inc.



Enos

Assessment is defined as the dollar value of a portion of the cost of a project placed upon an individual parcel or governmental unit in any particular year.

Apportionment is defined as the percentage of a project accruing to individual parcels within a drainage district, including governmental units at large.

Apportioning a project is more art than science and there is no magic formula, since every project is unique. Apportionment is basically a “snapshot in time” and is not based on:

- State equalized value/taxable value
- Zoning
- Speculation on future land use
- Whether or not the person signed the petition

APPORTIONING DO LIST:

- Use benefits derived
- Consider unique circumstances of the drainage district
- Consider basis of project costs
 - Excavation
 - Culverts
 - Clearing
 - Correcting past erosion concerns
- Consider land stewardship

SECTION 280 OF THE DRAIN CODE specifies that public lands used for a public purpose are not assessable except by agreement. These include federal lands; lands owned by the state; lands owned by any county, city, village, township or school district; and lands used exclusively for burial grounds.



Quaine

County drainage districts are supported by drain assessments that cover the cost of maintaining the drainage system. Law requires that assessments are based on the apportionment of benefits as determined by the drain commissioner.

Some of the groups or entities that you may assess include non-profit groups, churches, foundations, land conservancies and Habitat for Humanity. However, this is considered a special assessment, not a tax.

Whatever is apportioned must be defensible upon appeal. Upon appeal, you must show that you were objective, impartial, consistent and not arbitrary or capricious.

WHAT ABOUT MUNICIPAL UNIT APPORTIONMENT?

If you have a state highway in your drainage district, you may apply:

- MDOT – Section 14a of Act 51
- County, City or Village for Roads- 14a or some other method
- Township, City or Village - Per Section 151 “Shall be liable to pay by reason of the benefit to public health, convenience or welfare.”

WHAT ABOUT MUNICIPAL AT LARGE APPORTIONMENTS?

There is no guidance in the code for how to arrive at such a figure. Instead, you might want to consider the past history of a drain’s municipal assessments, or you might decide to negotiate something. As drain commissioner, Doug Enos uses a “Degree of Severity Index” in Midland County, based on a sliding scale of percentages, for example, 10.0% for standing water in a ditch with algae but 40.0% for combined sewer overflow problems.

WHAT ABOUT INDIVIDUAL APPORTIONMENTS?

Section 152 of The Drain Code states, “All apportionments of benefits under the provisions of this act shall be upon the principal of benefits derived.” Benefits could include 1) lifestyle improvements/protection, 2) contribution, 3) welfare.

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Farm Bureau Policy Development and 2017 Priorities

Laura Campbell, Michigan Farm Bureau



Campbell

Farmers have a large land base and therefore need land drainage, flood control, tile outlets and road access. They are interested in the work of their county drain commissioners and are involved in local government. Michigan Farm Bureau, and their 65 county farm bureaus across the state, exists to

help farmers organize their interests, priorities and policies. It started in 1919 by doing policy development and now serves 45,000 farming family members statewide. It is a very grassroots, member-driven organization.

DEVELOPING FARMER POLICY

Policy development starts when a farmer brings his issues and concerns to County Farm Bureau. They may go through a committee, annual meeting process or an online submission. Policies are recommended for discussion at the county annual meeting and then members vote on the policies.

Once a policy makes it past the county level, it can be moved forward to the state, which reviews 750-1,000 policy submissions per year. Recommendations go to the state annual meeting, which is attended by 400 county elected delegates. After the annual meeting, a policy book is published and made available online. These policies determine farmers’ legislative priorities and positions.

2017 FARM BUREAU PRIORITIES

- Statewide septic policy task force
 - Set standards for maintenance and testing
 - Representation from all sectors all regions
- Opposition to selective water quality monitoring by unqualified people
- New policy on infrastructure—responsible funding mechanisms, maintenance, increasing loan and grant funds for water/sewer
- Remove cap on conservation acres
- Drainage
 - Drain/water resource commissioner should remove blockages of water courses if they affect county drain flow
 - Oppose additional mandatory requirements for engineering on

- established drains
- Oppose requirements for two-stae or re-engineering of all drains
- Encourage drain/water resource commissioners to offer incentive credits for landowners who maintain drains on their property
- Encourage landowners to voluntarily use soil conservation practices.

Farm Bureau has not changed their positions on wetlands, environmental protection laws, sound science and opposition to new Waters of the US rule.

If you’ve never been to a county annual meeting, Farm Bureau encourages you to go, meet the farmers and hear their concerns. Communication, learning about farmers’ needs and helping them understand your needs will improve your relationship.

Utilizing LiDAR Data and GEO-HECRAS Software to Build Cost Effective Models and Flood Maps on Drain Projects

Nicholas Czerwinski, P.E., Spicer Group, Inc.



Czerwinski

LiDAR (light detection and ranging) is a valuable data collection process for getting information about ground surface elevation. A LiDAR map uses colors to distinguish high and low areas on drain maps, and these maps are often used by counties to provide data on drainage district boundaries.

In order to build models using LiDAR, Spicer Group, Inc. uses an engineering software package called GeoHECRAS—an AutoCAD, MicroStation and ESRI ArcGIS compatible 2D/3D graphical user interface to the US Army Corps of Engineers HEC-RAS. It has several advantages, one of them being that it is very easy to use a variety of data sources to construct your model. Another advantage is that you are working in a 3D environment.

ADVANTAGES – ACCURACY AND EFFICIENCY

- Allows for use of existing elevation data
- Reduces amount of survey time required
- Provides more detailed cross sections

- Reviews model in a 3D environment rapidly and accurately

ADVANTAGES – RAPID FLOOD MAPPING

- Single step process
- Flood map created as ESRI Shapefile
- More detailed model results
- Assists with cost benefit analysis
- Enhanced understanding on accuracy of existing FEMA floodplains

ADVANTAGES – PORTABILITY

- Model components are very portable (can be exported and shared)
 - GIS mapping software
 - CAD design software
 - Google Earth
- Can be converted to and from USACE HEC-RAS

ADVANTAGES – AFFORDABILITY

- Decreased survey time
- Decreased data input time
- More efficient flood mapping
- Ability to share data amongst modeling, design and mapping software

GeoHECRAS significantly speeds up HEC-RAS model creation and review, producing better and more accurate results. It also helps communicate the engineering results of a model much better than a profile or cross section view, especially to those who don't have an engineering or construction background.

Gerald R. Ford International Airport Long-term Stormwater/Deicing Management System

Roy D. Hawkins, R.L.A.
Kent County Dept. of Aeronautics



Hawkins

GFIA's National Pollutant Discharge Elimination System (NPDES) permit required elimination of the Airport's contribution to existing biofilms, and prevention of deicing runoff. Among the project

design elements were re-routing stormwater from the Airport's north detention basin to a new outfall at the Thornapple River, and reconfiguring the Airport's west apron stormwater system to consolidate runoff from all major existing and future aircraft deicing areas.

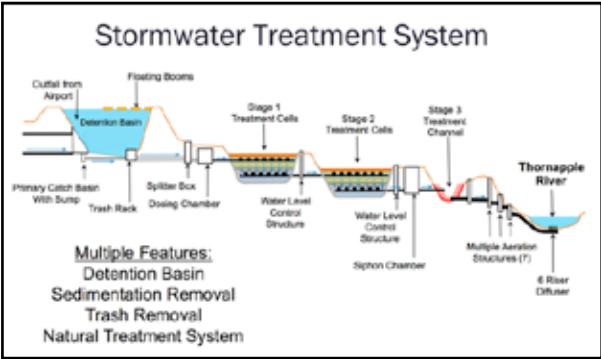
PROJECT GOALS

- Identify & design a comprehensive stormwater and deicing management system to address environmental concerns & ensure long-term NPDES permit compliance.
- Include, where feasible, design features that minimize the impact on the environment.
- Minimize capital and O/M costs without sacrificing anticipated environmental benefits.

PROJECT COMMITMENTS

- Remove contribution to nuisance biofilm (required)
- Build natural treatment system
- Construct seasonal bypass to existing stream
- Remove sediment
- Remove trash

The stormwater treatment system enhances the quality of the natural environment with an innovative design for collecting and treating propylene glycol and managing stormwater. The green design uses gravity, vegetated beds, and natural organisms to treat the stormwater with essentially no power consumption or residual waste.



MITIGATION ACCOMPLISHMENTS

- Water Quality Improved – biofilm contribution eliminated, natural treatment system, aeration
- Consolidated flow from three drainage districts to NTS
- Removal of typical stormwater pollutants
- Trash & sediment removal in detention basin
- 100% gravity flow
- No energy use – no pumps, solar power
- Continuation of current collection/recycling

- program
- Divert base flow (outside-deicing season) to Trout Creek
- Control flash flows and erosion potential in Trout Creek
- Submerged diffuser directs discharge flows
- Minimized hauling of existing material off-site
- Planned for future expansion & increased treatment efficiency

14A Update

Alan Boyer, P.E., LSG Engineers
James Davis, P.E., Michigan Department of Transportation



Boyer

Drain assessment calculations are based on the following laws:

- The Drain Code of 1956, Act 40
- Public Act 51 of 1951, MCL 247.664a
- Public Act 327 of 1972, which amends Public Act 51 to include Section 14a

Public Act 51 established the transportation fund and provides for its spending and administration of funds.

Section 14a of amendatory 1972 Public Act 327 provides for the expenditures of funds by the Department of State Highways and by the county road commissions to pay the cost of drain assessments with respect to state and county highways. Section 14a is not an amendment to the Drain Code of 1956.



Davis

Apportionment is based on a formula called “14a calculations,” with benefits based on a pro rata share of stormwater runoff from highways in the district in direct proportion to the entire district. The following is required for the MDOT 14a calculation submittal:

- Map of drainage district
- Area of drainage district (land use type)
- Area of MDOT right-of-way in drainage district
- Drainage district runoff coefficient(s)
- MDOT right-of-way runoff coefficient
- MDOT review of submittal

Per the Drain Code, MDOT needs a minimum of 20 days notice before the “day of review.” Supplemental benefits require joint agreement between MDOT and the county drain commissioner.

Collaborating for Success:
How the Nature Conservancy Can Help Drain Professionals

Randy Dell, The Nature Conservancy



Dell

The Nature Conservancy is a global conservation organization dedicated to conserving lands and waters. With one million members in 69 countries, it works with farmers, drain professionals and others to help reduce drain maintenance costs, improve water quality and make landowners happy.

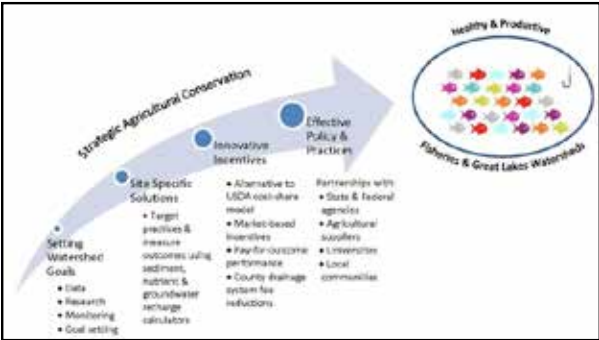
Their agricultural strategy encompasses setting watershed goals, site-specific solutions, innovative incentives and effective policy and practices.

Work initiatives include:

- Collaboration with a broad group of stakeholders to develop the 4R Nutrient Stewardship Certification Program, a model for voluntary nutrient management and conservation efforts
- Partnering with the Michigan Agri-Business Association (MABA) and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) to help farmers and agribusinesses protect and improve Saginaw Bay water quality
- The development of performance-based drain fee assessment program that integrates a land management factor into the methodology for calculating drain assessments. The primary objective is to develop an apportionment methodology that provides an incentive for good conservation practices, which reduce drain maintenance costs over time and ultimately improve water quality
- Partnering with stakeholders for coordinated real time drain management
- Implementation of Great Lakes Drain Management project which involves a team of farmers, drain managers, legal experts, hydrologists, conservation practitioners, and

policy makers from across the Great Lakes who are developing a path forward for the use of private (in-field tiling) drain water management (DWM) and publicly-engineered drain ditches to improve flow regimes and water quality in Great Lakes basin tributaries.

You can learn more about the Nature Conservancy’s work in Michigan by visiting <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/michigan/>.



“Drones for Drains” School

Tim Inman, P.E., P.S., CFM, Spicer Group, Inc.



Inman

Unmanned aerial vehicles (UAV’s), commonly referred to as “drones,” assist drain and water resource commissioners in their work. These “flying sensors” are able to collect the same kind of data you might get from an airplane or helicopter.

Drones allow for very high imagery at much lower altitudes (i.e., 2,200, 150 or 70 feet). Because of this, you can get very close to drains. They allow us to see into the shadows at a slower speed and without the extreme light variances seen from an airplane (the dynamic range).

Drones do a great job in open spaces. They are used for site inspections, mapping, digital elevation models, etc. You can see where people are working, elevations, materials getting put in, where the materials are staged, etc. This aerial imagery can be a very static or very dynamic process.

Drones utilize a gimbal (pivoted support) for control and stabilization. Cloud-based computing allows hundreds of drone images to be stitched together

into a single image. Photos are geotagged, so that the images automatically come with their location data.

When using drones, you need to be prepared for the increased risk of accidents, so insurance is advised. They should not be used close to trees or people, and they do not operate well beyond the visual line of sight or with sideways movement. Whether you hire the work done or do it yourself, drone photography should always be planned in advance, before collecting and processing the data.


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GETTING RAIN GARDENS LIFTING A SHOVEL

*Susan Bryan, Rain Garden Coordinator
Washtenaw County Water Resources Commissioner's Office*



Washtenaw County Water Resources runs a training program for residents that yields 60 rain gardens built a year – without lifting a shovel. The training is known as the Master Rain Gardener Certification class. Such a training program fulfills Storm

Water NPDES requirements for pollution reduction, public education, and post construction runoff control.

These trained Master Rain Gardeners become advocates and champions for green infrastructure, writing magazine articles, hosting tours, and promoting rain gardens in their local communities. They show up at public meetings supporting green infrastructure projects. They give talks on rain gardens at their local libraries. They write letters to elected officials supporting the stormwater budget.

The Master Rain Gardener class is cost effective, and appropriate for all kinds of communities - rural or urban. People love to be the one “in the know” and to pull themselves up by their own bootstraps.

Washtenaw County Water Resources has partnered with Shannan Gibb-Randall of InSite Design Studios to offer the certification class for the past six years. The class is more than a one-hour information session – it is five mornings of class. Our objective is to teach people how to design and build their own rain garden, so we try to teach them everything we know about the subject. Technical details like all of the different ways water can be conveyed to the rain garden, pipe attachments for downspouts, how to keep critters from nesting in the pipe – they are all covered.

We have found that offering a comprehensive skill-building class where the participants earn a certification is the key. They walk away with a brag-worthy title “Master Rain Gardener”, a t-shirt, and a skill they can share with their friends and neighbors.

The Master Rain Gardener class has also been offered via webinar for the last two years. So if your community is interested, look up the recording on YouTube, and offer it yourself.



NS BUILT WITHOUT

LESSONS LEARNED IN OUTREACH & EDUCATION

HOW TO MAKE IT HAPPEN – GETTING PEOPLE IN THE DOOR

How do we get people to participate? Find the right people. Advertising to the general public is fine, but we have found it is best to focus on gardeners.

Gardeners like to get their hands dirty – in fact, they expect to get them dirty. This is why when they learn to build a rain garden, they actually dig one. When they are trained about the importance and function of public rain gardens, they want to work in one. Gardeners also have a built-in environmental ethic that they expect to apply in a practical way.

Gardening is also non-partisan, and has a long respected history in this country, from the Ladies of Mount Vernon to School Vegetable Gardens to Guerilla Gardening. Unlike environmentalism, which is a political hot-potato, gardening spans the political spectrum, and can be implemented in any community, rural or urban.

So when you are marketing your newly-hatched rain garden program, begin by letting the local garden clubs, Master Gardener groups, and gardening clubs know there is a new opportunity.

Second, make it cool. There is a reason we call it “Master Rain Gardener.” It sounds cool and authoritative. It gives them a platform from which to speak “stormwater” to their friends and neighbors. It means they can give a talk to the Rotary Club as an “expert” and if you make leadership development part of the training - they lead. Washtenaw County Master Rain Gardeners give talks at farmer’s markets, rotary clubs, and festivals, all of their own accord.

HOW TO MAKE IT HAPPEN – VOLUNTEER TRAINING

In Washtenaw County’s Master Rain Gardener class – it is our goal to teach the students:

- Everything we know about rain gardens
- To become a neighborhood leader in stormwater

These are lofty goals. Why set such lofty goals? When people understand the scope of the stormwater runoff problem we are addressing, they start to think of ways to work towards a solution and are willing to put their sweat equity towards it.

By setting the bar high, volunteers start to think of ways they can make a difference beyond just building their own rain garden. They volunteer to take on the big problems – and weeding a large bioretention area is a big problem.



Master Rain Gardener April Banarek, along with co-worker April Hann, installed a rain garden at her work – Washtenaw County Learning Resource Center.

That said, during the class, the element that gives students the confidence to dig their own rain garden is getting personalized feedback on their site and their design. Over and over in feedback surveys, this has shown up as an essential element. So if you use our webinar recordings to offer a class, having staff present to give students feedback on their designs individually is key. We provide this feedback by looking at photos that students bring of their yard. Rarely do we visit the site.

Since we don't visit the site ourselves, it is important to train the students in risk management. Where not to put a rain garden is just as important as where to put one. We teach the Hippocratic Oath of "First, do no harm."

Another essential element we have found is having alumni of the class come back and tell stories about how they built their rain gardens. More than anything, these testimonials convince students that they can do it, too.

DEVELOPING SUPPORTERS & ADVOCATES

Once volunteers take on leadership roles and see themselves as volunteer stewardship leaders, they take on a sense of ownership, which benefits the stormwater program as a whole. Training is the beginning of the development of a stewardship ethic and the gardens themselves play a part.

There is nothing like having a rain garden on your own property to observe how it soaks stormwater into the ground, and see how it thrives. Volunteers see the volume of water flowing off their roof and into the garden and infiltrating into the ground. They haven't just heard rain gardens work – they know they work. They see it every time they look out their window.

Based on personal observation, this knowledge is a powerful force. When volunteers come to public meetings about new green infrastructure projects – which can meet neighborhood opposition or at least suspicion – they voice their support. The support of a citizen can be much more powerful than the voice of a bureaucrat in the charged atmosphere of a public meeting.

After the training, people build their rain gardens. How can we track that? They can be tracked using a simple spreadsheet or a database, but the most important part is to cultivate a relationship with the rain gardeners. Encourage them to share their successes with you. Then you know when they have completed their garden, and you can add another dot to the map.

We have also had success starting a Facebook Group where participants can share interesting rain garden facts, projects and observations. They also share photos of their rain gardens both for feedback and when they are complete. It is one of the easiest ways to keep track of who has built their garden, and you can do it from your desk.



Master Rain Gardener Roger Moon hosts a rain garden information session at his home. Since earning his certification, Roger has built 5 rain gardens, hosted 8 groups touring his rain gardens, and given at least ten "How to build a Rain Garden" talks at local libraries. More than a volunteer, he has become a rain garden ambassador.



Master Rain Gardener Tara Stowe installed a rain garden at her work - Zingerman's Bakery

DEVELOPING VOLUNTEERS

Often, municipalities have high-profile rain garden projects on public land that they built with grant funding. After the grant is done, these gardens can fall into neglect. Maintaining them not only takes money, it takes expertise. Sounds like a job for a Master Rain Gardener.

Volunteer Master Rain Gardeners, because they are trained and because they are gardeners, do an excellent job maintaining bioretention cells and rain gardens. A well-maintained garden will be mature and looking good within 2 years and will be much easier to maintain thereafter. Volunteers' knowledge make them more efficient, and they tend to be excited to work at exactly the right time of year - spring.

Working with volunteers isn't free – they need staff time, possibly tools, and some help bringing the pulled bags of weeds to a compost facility. But having a trained volunteer can leverage the labor of a whole group of volunteers, or even staff.

If EPA-mandated TMDL reduction goals are to be met in substantially built-out communities, the knowledge of how to retrofit a site with BMPs has to be part of the common knowledge of landowners. This replicable program increases the capacity of a municipality to make it so.

Susan Bryan and Shannan Gibb-Randall will be presenting on this topic at the Great Lakes and St. Lawrence Green Infrastructure Conference, May 31-June 2 in Detroit, MI. Come talk to them if you have any questions or are interested in collaborating. Contact Susan at bryans@ewashtenaw.org.

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NEW INTERCOUNTY DRAIN GUIDELINES AND PROCEDURES MANUAL

In July 2016, the Michigan Department of Agriculture and Rural Development (MDARD) issued an Intercounty Drain Procedures Grant to the Michigan Association of County Drain Commissioners (MACDC). MDARD Director Jamie Clover Adams offered the \$50,000 grant “to develop clear and concise guidelines and recommended procedures” for the administration of the more than 1,000 intercounty drain drainage boards chaired by MDARD. The MACDC engaged the services of Fahey Schultz Burzych & Rhodes PLC to facilitate the seven-month review process.

The guidelines and procedures provide education and clarification to drain and water resources commissioners relative to statutory requirements under the Drain Code and related statutes. The grant also required training which was delivered in two all-day sessions, in conjunction with the February MACDC 118th Annual Conference. The training was to ensure understanding of necessary procedures for a wide variety of areas for proper administration of drainage boards, such as accounting and record keeping, Freedom of Information Act, Open Meetings Act, financing, engaging professional services, environmental law compliance, general governance and fiduciary responsibilities.

“These recommended procedures will lead to greater government transparency and enhanced operation and maintenance of one of Michigan’s most vital forms of infrastructure,” said MDARD Director Clover Adams. “The content of these procedures is far-reaching, and it is my hope that many of these principals can be transferred to the everyday operation of county drain and water resource commissioners’ offices. I appreciate the long-standing working relationship with MACDC and their willingness to undertake this monumental task.”

The draft guidelines will be finalized by March 31.

Following are summaries of several of the sessions presented at the 118th Winter Conference. If you are interested in obtaining a copy of the complete manual please contact Peggy Snyder at MDARD at 517-284-5624 or snyderps@michigan.gov.

GOOD GOVERNANCE: AN IMPERATIVE FOUNDATION FOR INTERCOUNTY DRAINAGE BOARDS

- Governance describes the manner in which an intercounty drainage board manages or controls itself and its processes. A well-managed and prepared drainage board leads to better meetings, which necessarily leads to more efficient and effective project management and achievement.
- Each drainage board member has an important role to play in this, including, at a minimum, “[taking] all steps and perform[ing] all acts and sign[ing] all papers as commissioners are required to do singly in the case of other drains.” MCL 280.122. Knowing each members’ role, and when and how to utilize deputies and staff to assist or in the place of drainage board members, is fundamental to ensuring proper execution of statutory responsibilities.
- The drainage board is authorized to adopt its own parliamentary procedure to accomplish these objectives efficiently and effectively. The board may, or may not, rely solely only Robert’s Rules.
- Finally, intercounty drainage board members must be sensitive to the practical reality that property owners within the drainage board may not be able to distinguish between an individual board member and the drainage board. An individual board member does not have the right to speak on behalf of the drainage board unless so authorized by the board. Extra care is required to convey positions or actions of the board as contrasted with an individual board member’s own views on the board position or action.

DISPUTE RESOLUTION: AVOIDING—AND SMOOTHING OVER—BUMPS IN THE ROAD

Serving as a member of an intercounty drainage board brings with it a significant level of responsibility. Many of the responsibilities are self-evident, such as the importance of establishing or maintaining a particular project, or the commitment to provide open meetings and maintain public records. But it is also equally important for board members to uphold their

**Managing Record Retention and Distribution:
5 Tips to Sift Through the Paper**

Remember that the intercounty drainage board is itself subject to the State of Michigan Approved Record Retention General Schedule No. 36 as well as Freedom of Information Act (FOIA) disclosure and timing requirements.

1. Know where your records are and who is managing them as official record keeper and/or FOIA Coordinator.
2. Understand that a request for an intercounty drain record of any kind (minutes, notes of meetings, contracts, etc.) is a FOIA request to the board, even if received by just one member.
3. Adopt a FOIA Policy and Procedure, Public Summary and Fee Itemization Schedule now to enable the board to manage FOIA requests and, where necessary, charge fees for providing records.
4. Consolidate record locations and formats where possible to preserve records.
5. Identify a naming system that will allow prompt locating of specific types of records when needed, whether needed for a FOIA request or a legal opinion analyzing the scope of the board's authority or any other purpose.

Special attention is required for:

- Discussing an intercounty drainage board matter outside of a meeting, such as through email or during an otherwise permissible social gathering
- Establishing a quorum outside of a meeting or providing too much authority to a “mere” advisory committee
- Calling a meeting with a purpose of walking the drain
- Creating and utilizing standard notice and minutes templates—and the timelines for them
- Holding proper closed sessions
- Managing public comment in an efficient—and lawful—manner

fiduciary duties. Fiduciary duties are owed to the drainage board and the entirety of the drainage district—not just the portion of the drainage district within a member’s county. The fiduciary obligation includes the duty of due care and loyalty, as well as care in managing the board’s confidential information.

There are various legal grounds that act as obstacles or outright prohibitions on participation by board members in certain cases, from Drain Code provisions for conflicts and disqualification, to state laws applicable to other public officials and bodies, and local regulation or policy on the topic. Actual and potential conflicts of interest are best handled up front and with self-awareness and respect for the drainage board’s purpose and authority.

OPEN MEETINGS ACT REMINDERS FOR INTERCOUNTY DRAINAGE BOARDS

Enacted to promote governmental accountability and transparency in decision-making, Michigan’s Open Meetings Act (OMA) requires each intercounty drainage board to comply with certain procedures, even over and above those required by the Drain Code. OMA requires all—yes, all—deliberation and decisions of the drainage board to be made at a public meeting. These requirements are often new to drain commissioners. Vigilance of the notice and meeting requirements of the OMA is crucial, because it is so easy (and perhaps even understandable) to effortlessly slip into an otherwise well-intentioned OMA violation, yet the consequences can be severe.

CONSTRUCTION CONTRACTS – AVOIDING THE CHANGE ORDER MONSTER

Intercounty drainage boards face a challenge in large-scale construction projects, which often present problems in the field that require decision-making about the terms of the contract. While often unavoidable, unnecessary change orders frequently occur because:

- The scope of the work is not clear enough
- Time pressures arise due to seasonal nature of work
- A contract is accepted without review and sufficient tailoring to the specific project

When change orders are necessary, they result in a modification of the contract. Board action will be necessary, but can be avoided for minor, non-substantial changes if the Board has voted to give the Project Manager discretion to approve change orders within carefully defined limits. These orders should be reviewed and ratified by the Board at the next meeting.

To avoid disputes, the following tips are suggested:

- Always require that the contracts change order procedure be followed
- Put everything in writing and on the forms provided in the contract
- Describe any work to be performed by change order in detail
- Carefully set any extensions in time and payment in writing
- Do not permit “time and material” change orders

Discovery of unanticipated physical conditions in the field sometimes occurs. The contract may already have assigned responsibility for specific conditions, such as utility conflicts. If not, every public contract in Michigan greater than \$75,000 must contain a specified provision for dealing with these “surprises” in which the contractor will always ask for a contract adjustment. The most important features of this provision are:

- The condition must either be materially different that indicated in the contract, or unusual in nature differing materially from what would be ordinarily anticipated
- The contractor must stop work before disturbing the condition and give notice to the project manager
- The project manager must do an inspection and determine whether a change order is required
- A change order is either executed or denied

PETITIONED PROJECTS – THE IMPORTANCE OF WORKING TOGETHER

From counting petition signatures to coordinating construction inspections, the Drainage Board must work collaboratively on petitioned projects, even when the work is confined to one county. The Drainage Board, as a group, must perform all of the tasks that a Drain Commissioner would generally perform on their own for a county petition project, including:

- Verifying the sufficiency of a petition

- Appointing a surveyor or engineer
- Determining the practicability and necessity of the project (the Drainage Board acts as the Board of Determination)
- Filing all required orders (Order of Practicability, Order of Necessity, First Order of Determination, Final Order of Determination)
- Approving the project design and coordinating and required easements or permits
- Selecting a bid and awarding a construction contract
- Preparing a computation of cost and securing project financing
- Coordinating inspection of the construction

It is important to attend all Drainage Board meetings as the project develops. Good communication among Drainage Board members is crucial to the success of an intercounty drain project and can avoid unnecessary headaches as a project moves forward.

NON-PETITIONED MAINTENANCE

Key items to remember when contemplating non-petitioned maintenance on intercounty drains:

- The Drainage Board must approve maintenance before it takes place absent preauthorization to perform work
- A Drainage Board member should be designated to handle:
 - Plans and specifications for the work
 - Part 91 SESC and other permit responsibilities
 - Bids
 - Agreements with contractors, including bonds and insurances
 - Inspection
- Following up with other Drainage Board members on what took place and the related costs is essential.
- Any issue related to the maintenance is the responsibility of the entire Drainage Board and not just the individual Board member.

PREPARATION ESSENTIALS FOR REVISING INTERCOUNTY DRAIN DRAINAGE DISTRICT BOUNDARIES

Section 197 allows Drainage Boards to revise their Drainage District boundaries via two methods: (1) at a Day of Review of Drainage District Boundaries or (2) at a Hearing of Necessity, if a Chapter 8 petition has been filed. Preparation is essential when revising the boundaries via either method. Key items to remember prior to any revisions include:

- Retaining an engineer or surveyor to delineate new boundaries
- Determining the full route and course of the intercounty drain
- Including notice and a description of the proposed revisions in the notice—even in a notice for a Hearing of Necessity where the boundaries will be revised
- Anticipating property owner phone calls by setting up a separate phone line for questions if necessary
- Maintaining an orderly process for property owners to attend, sign in and discuss revisions with the Drain Commissioner, staff or consultants
- Preparing the necessary documents, such as the order and minutes, prior to the day of review or hearing
- MAPS! MAPS! MAPS! Any property owner who comes in to discuss boundary revisions will want to view their property in relation to the overall Drainage District. Not only will this show a level of professionalism, but it will also provide the property owner with a better understanding of the Drainage District

insuring a large construction project, intercounty drainage boards can't afford to sign off on the representations from contractors or engineers that a bond or insurance coverage is adequate. Intercounty drainage boards have a fiduciary duty to assure that there is adequate protection that the project will proceed as bid and be completed and that exposure due to accidents is minimized.

The Drain Code provides that in large projects (over \$100,000), a performance bond and general commercial liability insurance be in place for the project. Prudence, however, dictates that most projects involve the following types of protection:

- Bid bond, to protect against a successful low bidder who is unable to meet contract requirements for commencing the work
- Performance bond, to assure that if the contractor is unable to complete the project for whatever reason, the work can be completed by another contractor and paid for
- Payment bond, to protect against claims by subcontractors and suppliers who may not be paid by the general contractor
- Liability insurance, with appropriate coverage to protect against accidents and injuries at the work site

SURETY BONDS AND INSURANCE – IT'S IN YOUR HANDS

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Boards should always obtain the following proof of protection regarding liability coverage under a contractor's policy:

- Additional Insured Endorsement
- Designed Construction Project General Aggregate Limit Endorsement
- Declaration page showing the endorsements
- Certificate of Insurance

Other coverages, such as owner's protection policies, may fill gaps and provide protection that the contractor's general liability policy does not. They are discretionary, and intercounty drainage boards are encouraged to seek advice from their consultants, particularly in large-scale projects about other coverages that may be warranted.

DEALING WITH PA 222 CLAIMS – TREADING FLOOD WATERS CAREFULLY

Suits seeking damages for overflows and backups onto real property under PA 222 are on the rise. Although the statute contains conditions that a plaintiff must prove to establish liability, some of the terms in the statute are vague enough to permit landowners to file cases even in doubtful situations.

Claimants must prove that:

- The drainage district owned or operated the drain alleged to have caused the backup or overflow
- There was an actual "defect" in the drain – a term that the statute does not define
- The drainage district knew, or with reasonable care should have known about the defect
- The drainage district failed to take "reasonable steps" within a "reasonable time" to repair or remedy the defect
- The defect was a "substantial cause" of the event and subsequent harm

Claimants are likely to point to Section 196 of the Drain Code that permits, but does not require, annual inspection of drains in order to pin the drainage district with responsibility for knowing of an alleged defect. Regularly scheduled inspections (not necessarily annual) are recommended, and serve to demonstrate reasonable care by the intercounty drainage board to stay apprised of the drain's conditions.

The handling of claims when received is of paramount importance. Misdirected or incomplete claims received by a drain office are no barrier to liability unless the office provides the claimant with information on how and where to file a proper claim. Failure to provide this information, which should also be posted in public place at the drain office, will result in the claimant's right to file claim or a lawsuit even though proper procedures were not followed.

NREPA AND RELATED STATUTES

The Drainage Board must ensure that all requirements as to NREPA permits are met, regardless of the project size. Items to consider include:

- Ensure all SESC provisions are met and designate a Drainage Board member to obtain proper approvals
- Select consultants familiar with Drain Code exemptions in NREPA
- Designate a Drainage Board member to handle all permit requirements with appropriate inspection and follow up

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E. COLI IN MICHIGAN'S SURFACE WATERS

Molly Rippke, Michigan Department of Environmental Quality

The State of Michigan is largely defined by water. It is surrounded by four Great Lakes, is crisscrossed by 75,000 thousand miles of streams and rivers, and contains thousands of inland lakes and wetlands. Michigan residents and visitors want and deserve safe, clean waters for swimming, boating, and fishing. To that end, the Michigan Department of Environmental Quality (MDEQ) has developed a mapping tool that allows users to interact with water quality monitoring data, learn about the presence of E. coli in nearby waters, and identify potential sources of the bacteria in their local area. The focus of this new interactive mapping tool is to enable residents to make informed decisions about safe recreation and educate themselves on preventing and reducing bacterial contamination of their water resources.

In conjunction with the mapping tool, the MDEQ recently announced the release of the draft Statewide E. coli Total Maximum Daily Load (TMDL) as part of its effort to inform and engage Michigan citizens on the issue of E. coli in surface water. The MDEQ is developing a statewide approach to identify needed pollutant reductions in waters that are not safe for body contact because of bacteria. The purpose is to drive progress toward

the goal of clean and safe rivers, lakes, beaches, and wetlands using a more consistent and efficient framework.

E. coli is a fecal bacteria that is usually present in harmless amounts in all surface water throughout the state. When it is present in high amounts, it can make people sick. This is why Michigan has a water quality standard for E. coli. During the summer, on a daily basis, the E. coli should not exceed 300 E. coli per 100 milliliters, and year-round should not exceed 1,000 E. coli per 100 milliliters. If surface water does exceed these standards then there is an increased health risk from contacting the water. The water quality standard applies to all surface waters of the state, including those that are maintained by drain commissioners. While people rarely play in these ditches or drains, the water from these drains eventually does end up at a beach.

The federal Clean Water Act (CWA) contains a requirement for states to report water quality problems to the public and the federal government every two years. Michigan's report is called the Integrated Report because it combines the required reporting from several sections of



Three Mile and Holly Drains in Shiawassee and Genesee Counties are part of an E. coli TMDL approved in 2011.

the CWA. The Integrated Report contains a list of waters that do not meet water quality standards, among other things. When problems are reported, then either the problem must be fixed through other means or a TMDL must be developed. In some cases, such as an accidental spill, a cleanup can fix the problem. But in the case of E. coli in general, identifying and eliminating the potentially numerous sources can be a complex undertaking. This is when a TMDL is a useful tool in addressing water quality problems. A TMDL describes regulatory and voluntary best management practices for reducing E. coli pollution.

E. coli contamination is a widespread problem in Michigan; routine testing has shown E. coli levels in many areas are above the water quality standard. Using our formerly labor intensive watershed-by-watershed approach, as in the Three Mile and Holly Drain E. coli TMDL (Figure 1), our waiting list to develop TMDLs would have taken 17 years to complete. So a statewide approach is the most efficient and effective way to develop an E. coli TMDL. The statewide approach in this TMDL will also allow the MDEQ to add needed pollutant reductions to National Pollutant Discharge Elimination System (NPDES) permits in a more timely fashion. High amounts of E. coli are caused by many issues that are common wherever people live, including livestock agriculture, failing septic systems, storm water, sewer overflows, illicit connections, pets, and wildlife. The interactive mapping tool allows you to view local point sources, land cover information, waters that are impaired by high E. coli, and E. coli monitoring data collected in your area. Some of these issues are regulated by the MDEQ, like point sources (NPDES permits) and illegal sources, such as direct connections from residences to field tiles or ditches (illicit connections). Nonpoint sources are any sources that are not a point source (e.g., septs, agriculture) and they are generally not regulated by the MDEQ. Other agencies may have primary roles in certain issues, such as local health departments having responsibility over septic systems. In some cases, the remedy to the problem is mostly voluntary.

As a result, the long-term solution to bacterial problems can only be accomplished through a collaborative approach. In addition to its work on effective NPDES permit requirements and corrective actions on illegal sources, the MDEQ is looking for assistance from landowners, local health departments, conservation districts, other state and local agencies, and environmental groups to focus voluntary improvements in areas where nonpoint sources are a problem.

How will this statewide E. coli TMDL affect drain and water resource commissioners?

- If you have a Municipal Separate Storm Sewer System (MS4) permit, and the TMDL covers the MS4 regulated portion of your drains, then the TMDL may have a direct effect on you. When an MS4 permit is reissued, if it is within, or discharges to, an approved TMDL watershed, the new permit will likely have TMDL-specific requirements added. These requirements include the submittal of a “TMDL Implementation Plan,” followed by carrying out the plan throughout the term of the permit. The purpose of the TMDL Implementation Plan is to focus efforts of the permittee on reducing levels of the pollutant in their discharges through the targeted use of existing programs, such as the Illicit Discharge Elimination Program (IDEP). The TMDL Implementation Plans should be designed to show progress in meeting the goals of the TMDL.
- If you are not an MS4 permittee, you may be asked to become a partner with the MDEQ or other organizations in addressing E. coli issues in your non-MS4 regulated drains. One example of involvement could be through a CWA Section 319 or other type of grant. This would be voluntary.

How can drain and water resource commissioners help to fix this problem?

You may partner with local watershed groups, conservation districts, local health departments, or

the MDEQ to implement watershed management planning efforts or best management practices, or simply lend support to their efforts. Additionally, there are several best management practices that relate to open drains that the MDEQ promotes for reducing nonpoint sources of E. coli, including:

- Well vegetated banks and unfarmed riparian buffer strips are great to reduce E. coli inputs to surface water, plus they benefit fish and wildlife and remove other pollutants too.
- Saturated buffers, where agricultural tiles and under-drains outlet into a retention area above the vegetated buffer, instead of directly into the open drain/ditch, allow E. coli to die, settle, or filter out.
- Wetland restoration projects, if properly planned, can filter out E. coli.
- As always, the MDEQ urges everyone to report illegal activity. This includes suspicious looking tile outlets to drains and straight pipes that may be illicit connections (Figure 2). You can report these to the MDEQ on the MiWaters website at miwaters.deq.state.mi.us or to your local health department (if you suspect raw sewage).



Gray scums downstream of an illicit connection. The E. coli concentration at this site was in the millions.



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The MDEQ will continue to focus its efforts on reducing E. coli pollution through discharge permit requirements and enforcement actions on illegal sources. The TMDL does not provide the MDEQ with any new regulatory authority, including new regulations on nonpoint sources. The regulatory authority of the MDEQ is only one part of the solution. In order to fix the E. coli problem, it is absolutely necessary to have the support and cooperation of local leaders, landowners, local health departments, conservation districts, drain commissioners, other agencies, and environmental groups. Together we can focus on voluntary improvements and education. The MDEQ is promoting voluntary pollution reduction programs such as the Michigan Agricultural Environmental Assurance Program, activities related to watershed management planning (such as Section 319 funding), and supporting the needs and efforts of local leaders and environmental organizations.

The draft Statewide E. coli TMDL and the interactive mapping tool are online for public discussion. Please visit www.michigan.gov/ecolitmdl to view the draft TMDL or the mapping tool. If you have comments or questions on E. coli in surface waters or the TMDL, please contact Molly Rippke at 517 284 5547 or rippkem@michigan.gov.


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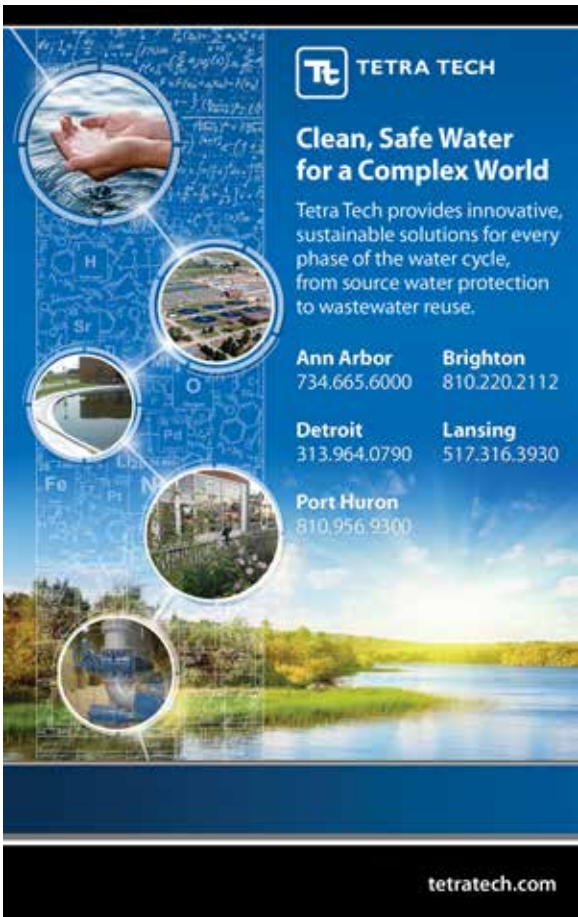
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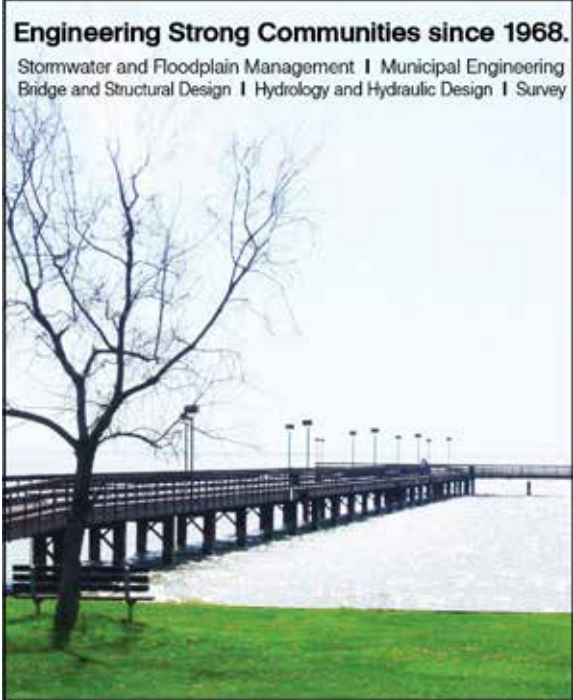
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NEW MACOMB COUNTY PUBLIC WORKS CO SINKHOLE PROJECT

Wayne Oehmke, Anderson, Eckstein and Westrick, Inc.



The family who lived in this home at the corner of Eberlein and 15 Mile in the City of Fraser, was awakened early in the morning of Dec. 24 to sounds of “creaking, cracking, pounding,” and it was soon discovered that the noises they were hearing were associated with their house shifting due to the developing sinkhole.

This huge problem came to light early in the morning of Saturday, December 24, Christmas Eve day, when the family living at 34980 Eberlein Drive in the city of Fraser, was awakened by “creaking, cracking, pounding” sounds, and realized there was something terribly wrong with their home. They called Fraser Public Safety officials who immediately responded to their location and determined that their home appeared to be sinking into the ground.

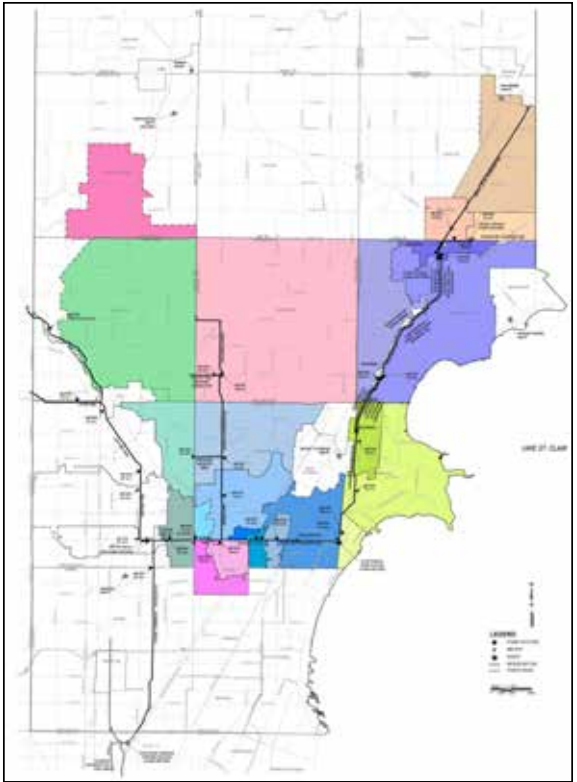
Public Safety officials soon notified the residents on Eberlein, 22 of them, along with the homeowners at 15370 15 Mile, that there was a sinkhole developing, and they needed to evacuate their homes very quickly. The only street



The family of this home, located on 15 Mile Road, just west of Eberlein, was also evacuated and the home was subsequently condemned as it too had sustained significant damage related to the sinkhole.

leading to their homes was at the intersection of 15 Mile and Eberlein, right where the epicenter of the sinkhole was developing. There were additional safety concerns raised, as the utilities for those homes were in danger of being cut due to their proximity to the growing sinkhole. As a safety precaution, the utilities were cut later that day, and crews were brought in to “winterize” the homes, along with generators to power some of the sump pumps.

The families were quickly evacuated, literally with the clothing on their backs and whatever they could gather in the few minutes they had before leaving their homes; surely not the way they, and those who rushed to assist them, had planned on spending their Christmas holiday.



Macomb County communities impacted by the sinkhole. The thinking was that there was a break in the Macomb Interceptor Drainage District (MID) 11-foot diameter pipe that is buried some 60 feet underground in that location. While located in the city of Fraser, the break is centered at 15 Mile and Eberlein, between Hayes and Utica Roads, with

COMMISSIONER LEADS EFFORTS ON

Clinton Township on the north side of 15 Mile, and the City of Sterling Heights just across Hayes Road.

The 11 communities served by the interceptor are the cities of Fraser, Sterling Heights, Utica and New Haven, and the townships of Chesterfield, Shelby Clinton, Harrison, Lenox, Washington, and Macomb, plus Selfridge Air National Guard Base. These communities have a combined total population of more than 527,000, with more than 43,000 businesses located in them as well.

There is a collapse in the pipe and a nearby manhole; the damaged pipe is made of unreinforced concrete, and the damaged area and sinkhole are in what is known as the “Romeo Arm of the MID,” a 4.3 mile stretch of piping. Once it connects with Oakland County it becomes the Oakland Macomb Interceptor Drain (OMID), and ultimately flows into the Northeast Pump Station, just south of 8 Mile Road in the City of Detroit where the flow is lifted and goes into the Great Lakes Water Authority (GLWA) system.

There have been two previous breaks in the same general location as the current problem, one in 1978, and a second in 2004. Following lengthy 10-month repairs in 2004, ownership of the pipeline was transferred from the Detroit Water & Sewerage Board to MID in 2009. Soil conditions are less than ideal for this stretch of the piping, and at this time it’s estimated that it will cost approximately \$78 million and take about 10 months to repair the current damaged section. Discussions at multiple levels are occurring at this time regarding a more long-lasting repair for the entire 4.3 miles that would include lining it with “HOBAS” or similar pipe. Much of the OMID has already been lined with the fiberglass reinforced polymer mortar pipe, and while it’s currently estimated this would cost approximately \$72 million, and extend the project’s timeline for completion, it would also add security and

longevity to this trouble-plagued interceptor.

AEW’s involvement began with a City of Fraser official’s phone call to Scott Lockwood, AEW Executive VP, and the city’s engineer, early on December 24. After his site visit, Lockwood communicated with AEW’s President and CEO Roy Rose, and together with Macomb County engineers, they mobilized Lou Urban, PE, Senior Project Engineer, who serves as the Project Manager, and other AEW team members.

The AEW team also engaged Karen Ridgeway, President of Applied Science, Inc.; Fritz Klingler, president of FKE Engineering Associates (FKE);

Steve Mancini, President & CEO of Ric-Man Construction, Inc.; Gino Mersino, Project Director for Mersino/Global Pump; Tim Hutchinson, Field Supt. for Michigan CAT; and their teams, who all joined in almost immediately.

They were also joined by a number of other contractors and sub-contractors. All of the utilities and cable providers worked hand-in-hand to help restore utilities and make things

as normal as possible for everyone involved. This veritable army of people and equipment were all assembled over the Christmas holiday weekend. They worked through the New Year’s holidays and continue on the job today.

Newly-elected Macomb County Department of Public Works Commissioner Candice Miller hit the ground running on her first official day in office with an on-site visit and press conference/tour on January 1. She was joined by County Executive Mark Hackel and newly-appointed Chief Deputy Commissioner Brian Baker. Their team was rounded out with recently appointed Anthony Forlini, former Harrison Township Supervisor and State Representative, who joined the department as Operations Manager. The department’s Chief Engineer, Keith Graboske, and their team of engineers, the Department of Roads and the

**“We value the teamwork displayed by all concerned in this enormous project; the administrators, officials and staff at the Macomb Dept. of Public Works and the communities involved, and our contractors and sub-contractor partners who are all going above and beyond to resolve and repair this significant interceptor break and the sinkhole it’s creating.
– Roy Rose, AEW, President & CEO**



Fraser Mayor Joe Nichols, Macomb County Public Works Director Candice Miller, and County Executive Mark Hackel tour the Sinkhole site on January 1.

county's Health Department have all been actively engaged in this huge effort.

Fraser Mayor Joe Nichols, City Council, Fire Division Commander Lt. Michael Pettyes, Patrol Division Commander Lt. Dave Bisby, Public Works Supt. Bernard Van Fleteren, Building Official Randy Warunek, Electrical Inspector Nick Schaefer, together with their teams, have been very helpful, available and are community minded public servants. Senior Activity Center Director Christina Woods and her team allowed the use of the facility as our "Command Center." Located at Ground Zero for the sinkhole, this was much appreciated as we scrambled to put our group together in the early days of combating the sinkhole.

Following the holiday break, our command center was relocated to a strip mall located at 15 Mile and Hayes roads. A number of AEW staff members currently work out of that office location and interface daily with county, state, and city officials. Clinton Township, Fraser, Macomb County and the State of Michigan all announced "State of Emergency Declarations" arising from the sinkhole. Our team meets regularly with Vicki Wolber, Macomb's Emergency Management and Communications Director, and her team at "COMTEC," the county's communications and technology center.

Clinton Township Supervisor Bob Cannon, his board, and Department of Public Services Director Mary Bednar PE, CFM have been active participants in this ongoing effort that so directly impacts both Fraser and Clinton Township residents and the business community. Sterling Heights officials have also been actively involved in this huge effort.

Communication via phone and email was established with the evacuated families and we share information with them on a regular basis. Two of the Eberlein homes and the 15 Mile home were eventually condemned out of safety concerns, and residents of the remaining homes were able to return home the evening of Sunday, January 8. Prior to their return, utilities were restored and a temporary access road was established from 15 Mile to Eberlein.

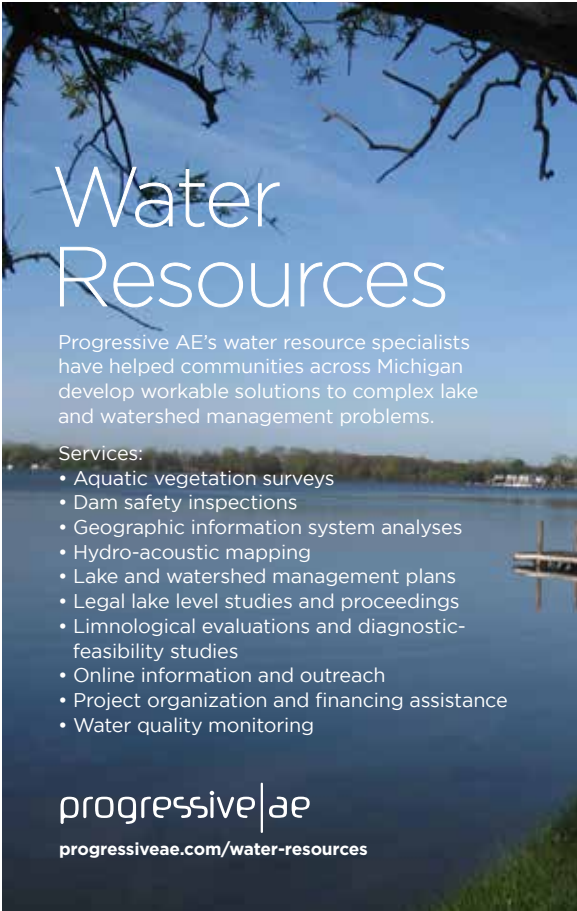
Meetings with residents, city and local officials were held at Fraser City Hall on December 26, and January 5, 9, and 31. News conferences and tours were organized for new Macomb County Public Works Commissioner Candice Miller, along with County Executive Mark Hackel, Fraser Mayor Joe Nichols, and other government officials on Sunday, January 1; and with Governor Rick Snyder on Sunday, January 8; and again with a host of federal, state and local officials on Sunday, January 15.

A number of press releases have been distributed, with one encouraging locals residents and businesses to conserve water, with the goal of lessening the flow into the sewer system. The message seems to have made a positive impact and because of it, there has been no need to activate pumps discharging into the waterways since it was issued. Prior to the water conservation request and the installation of the short- and mid-term "dry weather" by-pass pipes and pumps all being in place and operating, there was one occasion on December 26 when by pass pumping of some sewage into area drains and the Clinton River was deemed necessary in order to protect area basements from being inundated with sewage.

Work continues on an around-the-clock basis, and while much has been accomplished, there is still much work to do. Short- and mid-term "dry weather" by pass piping is in place and is operational; dewatering efforts are in progress to lower the water table and reduce pressure on the already damaged pipeline; compaction grouting work has been completed with the goal of stabilizing the approximately 150' by 300' sinkhole; and efforts are now focused on the installation of larger diameter, long-term by pass piping that will effectively divert the entire sewage stream around the damaged portions of the interceptor and place it back into the interceptor downstream.

A Traffic Plan was recently approved by the Department of Roads, the cities of Fraser and Sterling Heights, and Clinton Township, and is in the process of implementation. The plan includes traffic and pedestrian routing information, along with signage promoting and directing motorists to local business that we've been working diligently to keep as accessible as possible at this time.

Team AEW is proud to serve in the lead role on this very significant project. We are most grateful that to this point there have been no injuries reported, and that progress is being made. We look forward to getting to the source of the problem, repairing it, and getting life back to normal for everyone involved just as soon as possible.



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2017 MACDC WINTER CONFERENCE AWARDS

MACDC HONORS NEW LIFE MEMBER

The Michigan Association of County Drain Commissioners honored Midland County Drain Commissioner Douglas D. Enos with the Geoffrey H. Seidlein Life Membership Award at their 118th Annual Winter Conference in February. Mr. Enos was elected Midland County Drain Commissioner in 1997. Prior to serving as Drain Commissioner, Enos worked as an engineer for Spicer Group and with the Saginaw County Public Works under Public Works Commissioners Jim Koski and Walt Wendling. Mr. Enos graduated from Michigan Technological University with a degree in Civil Engineering.

For more than 40 years, Douglas Enos has devoted his life to being a steward of county drains and the Michigan Drain Code. Over the years, he has served on many committees with the MACDC and on the Board of Directors as the Northeast District Chair and as President from 2013 to 2014



MACDC President David Thompson with Life Member Awardee Douglas Enos.

Innovation & Excellence Awards

NORTH SHORE DRAIN

The North Shore Drain project started out with a difficult set of circumstances with a large petition project from the 1990's on the same drain just having been paid off. However, engineers and the Allegan County Drain Commissioner were able to overcome this and a myriad of other financial, physical, and permitting obstacles in order to complete a project that addressed several separate drainage issues in an area that had long been ignored because of the difficulty in doing a small scale project. As it is with most projects in this area of the State, it had been promised that the majority of the work would not occur between Memorial Day and Labor Day. Construction started in December of 2015, picked back up in April of 2016 and was substantially complete by June of 2016. Some final cleanup and punch list work was finished in September and October of 2016, but the work has been in place and tested with several large rain events, with many of the residents praising its functionality and how good it looks in the process.

PROJECT TEAM:

Denise Medemar, Allegan County Drain Commissioner
Engineer: ENG., Inc.
Contractor: Hoffman Bros., Inc.
Contributing Companies: SME and GEI Consultants



Innovation and Excellence Award Winners for North Shore Drain

SEYDELL DRAIN

The Seydell Drain Drainage District encompasses roughly 1,083 acres within the Grand River watershed and consists of primarily agricultural lands with some larger residential tracts and forested areas. Over time, natural drainage ways, private ditches and culverts had deteriorated to a point where chronic seasonal flooding was adversely affecting homes and property in the district.

The project met the objectives laid out by impacted property owners and the Ottawa County Water Resources Commissioner by providing a holistic, sustainable solution to address drainage issues within the District. The success of this project was due to the coordination and collaboration of the OCWRC with the public, Biendon Township, OCRC and MDEQ. The efforts of the project team helped to reduce localized flooding, improve water quality, lower ground water levels, increase agricultural production, and improve public roads within the District.

PROJECT TEAM:

Joe Bush, Ottawa County Water Resources Commissioner
Engineer: Land & Resource Engineering
Contractor: Busscher Development Inc.
Suppliers: Cadillac Culvert Inc.; Hanes Geo Components; Northern Concrete Pipe, Inc.



Innovation and Excellence Award Winners for Seydell Drain with MACDC President David Thompson

Honorable Mention

KAREGNONDI WATER AUTHORITY (KWA) PIPELINE ENVIRONMENTAL PERMITTING

The construction of the new \$300 million Karegnondi Pipeline has been a hot topic in Michigan for several years. Designing and constructing 80 miles of new 60-inch steel pipe across three counties was no easy task; however, the project was a success and completed on time. Yet, with all the publicity the project attracted regarding the complexity of its installation, perhaps one of the most important tasks that receives very little attention is the environmental enhancements to drains, streams, and wetlands and the role that the Genesee County Drain Commissioner, Lapeer County Drain Commissioner, Sanilac County Drain Commissioner, St. Clair County Drain Commissioner and Michigan Department of Agriculture and Rural Development served to integrate these enhancements. It's important to note the Karegnondi Water Authority (KWA) invested \$20 million in environmental infrastructure to enhance drains, streams and wetlands. The Drain Commissioners worked closely with the KWA, MDEQ and property owners to accomplish this.

PROJECT TEAM:

Jeffrey Wright, Genesee County Drain Commissioner
Joseph Suma, Lapeer County Drain Commissioner
Greg Alexander, Sanilac County Drain Commissioner
Robert Wiley, St. Clair County Drain Commissioner
Engineers: Wade Trim, Inc.; AECOM; Spicer Group, Inc.; Streamside Ecological Services



KWA Pipeline Environmental Permitting Project Team

OAKLAND COUNTY WRC APPOINTS NEW CHIEF DEPUTY



Vaara

With over 25 years' experience as an environmental professional, Vaara has a background in environmental science, stormwater management, government and community relations and planning. She has been the Executive Director of the non-profit Clinton River Watershed Council since 2008. She has an extensive background in environmental land use planning, wetland and woodland assessment and preservation, stormwater and watershed management, and environmental ordinance development.

"Anne is a great planner and environmentalist, and a top notch expert in green infrastructure, stormwater, and water resources," said Nash. "She's highly respected in the communities around the region and will be an excellent manager for this organization going forward."

Prior to her work for the watershed council, Anne was a senior environmental planning consultant for a private consulting firm and previously was the Environmental Director for West Bloomfield Township. She earned her bachelor's degree in Horticulture and a master's degree in Environmental Science and Wetland Ecology from Michigan State University. She also studied Urban and Regional Planning at Eastern Michigan University.

"I am honored to become Commissioner Nash's new Chief Deputy and join his team of dedicated engineers and other professionals to protect our valuable water resources and assist in the advancement of sound environmental solutions for stormwater management. I take a regional approach when it comes to water and working with so many

Oakland County Water Resources Commissioner Jim Nash recently announced that he has selected Anne Vaara of Royal Oak as his new Chief Deputy. She is expected to start in mid-April, filling the vacancy left by Chief Deputy Philip Sanzica, P.E., who

great engineering and planning professionals during my career will really help me serve Commissioner Nash and the people of Oakland County."

Retiring Chief Deputy Philip Sanzica, P.E., who will assist in the transition for a period of several months, has been an engineer and public servant for the people of Oakland County for 38 of the last 45 years.

"Hiring Phil Sanzica when I first assumed office was the best decision I ever made. Oakland County and this office have been well served by him over his decades of service and his dedication to building the best infrastructure possible," said Nash.

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Northern Concrete Pipe accepting QCast Award

When you visit a Northern Concrete Pipe plant, you’re immediately struck by the absolute dedication to worker safety and the unwavering focus on quality. It is through this dedication of employees and management that Northern Concrete Pipe was awarded the highest quality award of America’s concrete pipe industry presented at the American Concrete Pipe Association’s (ACPA) annual Pipe School in Arlington, Texas, January, 2017.

The ACPA’s “Quality Cast” Plant Certification Program, commonly known as QCast, is a recognized plant certification for quality assurance in the concrete

pipe industry. ACPA QCast awards are designed to recognize outstanding plants on the most important measures of production quality.

The QCast program covers the inspection of materials, finished products, and handling/storage procedures, as well as performance testing and quality control documentation. Plants may be certified in storm sewer and culvert pipe, sanitary sewer, precast boxes, three-sided structures, manholes and other precast structures.

Plants in each of the certification categories that score 95% or better on their annual QCast audit are recognized with the ACPA QCast Awards. One overall winner is selected in each category. Regardless of where you score in each category, the plant with the highest over-all score in all categories is selected as the top QCast Plant for the year.

While all Northern Concrete Pipe plants scored 95% or better on their annual audit, the plant in Bay City was awarded the Top-Quality QCast Plant in North America for 2016.

Winning awards is nothing new for Northern Concrete Pipe as they have also been awarded Platinum, Silver, and Gold Michigan Governors Awards for their safety program at all plants.

Ask any Washabaugh family member about these awards, and they will humbly tell you it was a group effort steered by their Quality Control Manager Rich Brewster. Through Brewster’s guidance, and a dedication to quality and safety by all plant employees and management, Northern Concrete Pipe customers receive products that will outperform any others in Michigan and Ohio.

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**F&V NAMES TWO NEW ASSOCIATES, TWO
SENIOR ASSOCIATES**

Fleis & VandenBrink have announced two new Associates, John DeVol, PE, and Jeff Pugh, PE, and two new Senior Associates, Gary Bartow and David Bluhm, PE.

The Principal/Associate program was started in 2006 to promote leadership and ownership transition. Last year, the firm promoted two Associates to Senior Associates for the first time.

“We are excited to see these new Associates and Senior Associates who are eager to step up their commitment to the future of F&V from both a leadership and ownership position,” said Paul Galdes, PE, F&V’s vice president and one of five Principals in the firm.

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DeVol

DeVol joined F&V in 2004 as a project manager and has been providing key support in the West Michigan Municipal Services Group. DeVol runs the Traverse City office and specializes in municipal work from water, sewer, roads and recreation projects and project funding.

Pugh, F&V's Process Design Group Manager in Grand Rapids, joined the firm in 2011 as a senior project manager. He has more than three decades of experience in water and wastewater process and design and has been active in the Michigan Water Environment Association for 35 years.



Pugh



Bartow

Bartow has over 36 years of experience in consulting engineering, the last eight at F&V. He was named co-manager of the East Michigan Services Group in 2015. Bartow runs the Midland office and specializes in municipal and private development projects.

Bluhm joined F&V in 2014 as a municipal senior project manager. He was promoted in 2016 to West Michigan & Water Resource Specialties Manager. Bluhm specializes in asset management, roads and utilities projects.



Bluhm

The changes in the leadership and ownership transition team were announced January 19 during the firm's 24th annual breakfast, where company leaders – Principals, Senior Associates, Associates and several other staff – pitched in to make breakfast for more than 190 employees at eight different sites.

HUBBELL, ROTH & CLARK, INC. ANNOUNCES NEW LEADERSHIP

Hubbell, Roth & Clark, Inc. (HRC) is proud to announce Daniel W. Mitchell, P.E., has been named President, Nancy MD Faught, P.E., has been named Executive Vice-President and Charles E. Hart, P.E., has been named a Vice-President of the Firm effective January 2017. These announcements come on the eve of the retirements of President George E. Hubbell, P.E. and Executive Vic-President Thomas E. Biehl, P.E.

"You simply don't replace 65 years of combined leadership overnight," Mr. Mitchell commented

when asked about the retirements. "However, HRC is blessed with many talented people that include our Board of Directors, staff and clientele. With these people and the fundamental proven approach to conducting business intact, I am confident this company will continue to provide excellent engineering services as it has for over 100 years."

Mr. Mitchell is a registered Professional Engineer and has a bachelor's degree in Mechanical Engineering from Lawrence Technological University. He has been with HRC since 1990 and serves as Principal In-Charge of all of HRC's field services. Mr. Mitchell is the primary contact for the Cities of Livonia, Pontiac, Rochester Hills and Southfield; the Villages of Beverly Hills and Bingham Farms; and the Office of the Oakland County Water Resources Commissioner.



Mitchell



Faught

With over 28 years of experience, Ms. Faught's work has largely focused on various transportation and multi-discipline projects. Ms. Faught has a bachelor's degree in Civil Engineering from Michigan State University and is a registered Professional Engineer. She serves as an active member of American Public Works Association and Michigan State University's Department of Civil & Environmental Engineering Professional Advisory Board.

Mr. Hart joined HRC in 1998 and currently leads the Road Design Department. He is highly experienced in road, stormwater and utility design, and project management. Mr. Hart has a bachelor's degree in Civil and Environmental Engineering from the University of Michigan and is a registered Professional Engineer.



Hart

ASTI ENVIRONMENTAL TURNS 32

ASTI Environmental just turned 32 thanks to our 3,500 clients, 32 associates with 350+ years of technical expertise and boosters. Since ASTI was founded by Tom Wackerman and Peter Collins on February 2, 1985, we have grown and diversified to provide environmental assessment, remediation, compliance, restoration and incentives services to commercial, industrial, institutional and governmental clients across the US.

ASTI has completed more than 10,500 projects nationally. Some of the projects worth noting include an Anthrax Vaccination Facility in Lansing, the iconic Michigan Central train station in Corktown, a Uranium Mine in the Czech Republic, restoration of a 455-acre coastal Great Lakes Marsh along Lake St. Clair at Lake St. Clair (Metro Beach) Metropark in Harrison Township, the Village at Grand Traverse Commons (former psychiatric hospital), the Strand Theatre in Pontiac, a NIKE Missile Base, Capital Park (Detroit), the 5,000 acre Detroit International Wildlife Refuge that runs along 48 miles of shoreline between the lower Detroit River and western shore of Lake Erie, Henry Ford's office building in Highland Park, a 10,000 acre limestone mine in Newberry (Upper Peninsula), Blue Water Bridge in Port Huron, Flint Farmers Market, Marquette Holy Family Orphanage, Detroit (Eastern) Market Gardens, the 4,500,000 square foot Steelcase plant on 200+ acres in Grand Rapids, a civil war era prison in Jackson, Michigan Theatre (Detroit), Lebowsky Center (former Capitol Theatre) in Owosso, a 455-acre coastal wetland mitigation project known as Blue Water Isles in Clay Township (St. Clair County), the former Detroit Fire Department Headquarters, Lansing School for the Blind (Stevie Wonder studied classical piano here), and Wayne County Airport.

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For more information on how our **Local Government Law team** can assist your community, visit mikameyers.com.

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CALENDAR OF EVENTS

APRIL 10 – 13, 2017

MTA Conference & Expo
Lansing Center, Lansing

MAY 4, 2017

Northwest District Meeting
Ludington Pump Storage Facility

MAY 12, 2017

Northeast District Meeting
Shiawassee County

Southwest District Meeting
Berrien County

MAY 19, 2017

Northern District Meeting
Location TBD

MAY 31, 2017

Southeast District Meeting
Clarkston

MAY 31 – JUNE 2, 2017

Green Infrastructure Conference
Cobo Center, Detroit

JULY 19 – 21, 2017

MACDC Annual Summer Conference
Crystal Mountain Resort, Thompsonville

SEPTEMBER 13 – 15, 2017

MML Convention
Holland

SEPTEMBER 24 – 26, 2017

MAC Annual Conference
Grand Hotel, Mackinac Island

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BMJ..... 8

Cadillac Culvert 19

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Fahey Schultz Burzych Rhodes PLC 8

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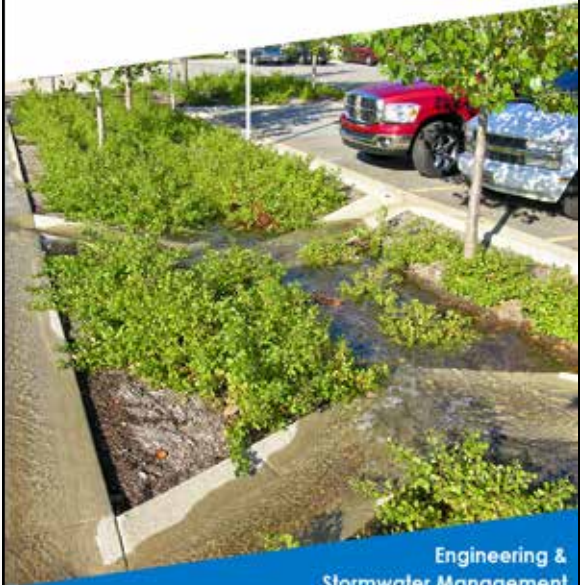


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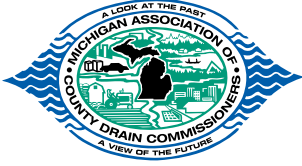


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