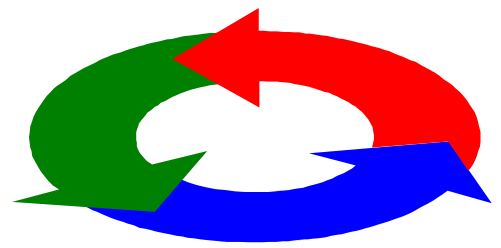


Amendments



Improving Awareness & Advocacy of the Michigan Biosolids Program

Volume 17, Fourth Quarter

October, 2013

Biosolids Program Update

MSU Agricultural Exposition

The Michigan Biosolids Team exhibited at 2013 MSU Ag Expo, July 16-18. Turnout was low because the weather was hot with temperatures getting into the 90's. The corn looked good with a distinct advantage on the biosolids side of the demo plot. We did receive approximately 25 farmers signing up interested in receiving biosolids. Our display made the Michigan Farmer Magazine which can be viewed at:

<http://magissues.farmprogress.com/mif/mf09sep13/mif013.pdf>



MBT Tent and Demonstration Plot



Demonstration Plot

Biosolids Conference

The Michigan Biosolids Team will be hosting the 2014 Biosolids Conference scheduled for **March 11 and 12, 2014**, at the Holiday Inn Conference Center in Big Rapids. The theme for this conference is "**Biosolids Optimization, Focusing on the Product**". We are currently working on the Agenda and finalizing our tours. We have not been north since 2007 so we felt it was time to head in that direction. So put these dates on your calendar and there will be more information to follow.

Biosolids Calendars

The Michigan Biosolids Team will be printing Biosolids Calendars for 2014. There is still time to sponsor a month. If interested, please contact Jeff Pugh at jpugh@fveng.com or 616-942-3616; Karlyn Wickham at the MWEA Office at Karlyn@mi-wea.org or 517-641-7377 to receive a Sponsorship Form.

Biosolids Programs Collaboration

Members of the Michigan Biosolids Team have been participating in Regional and National conference calls to update participants on Biosolids Programs in different parts of the Region and Country. States include Ohio, Indiana, Washington, Florida, Pennsylvania, Colorado, to name a few.

MDEQ Biosolids Program Staff Area of Coverage

The MDEQ Biosolids Staff is releasing a new area of coverage. The changes are now divided by the county level and no longer by district boundaries. A copy of the area of coverage map is on page 10 of this newsletter and by the MDEQ Biosolids Web page at:

http://www.michigan.gov/documents/deq/wrd-biosolids-staff_402800_7.pdf?20131001145501

Bay City wastewater officials hope to fix problem with new \$686K sludge pipe

By Justin Engel | jengel1@mlive.com
May 31, 2013 at 11:22 AM
Email



Officials with the Bay City Wastewater Treatment Plant, shown here in 1996, are looking to replace piping installed in the 1950s. File | MLive.com

BAY CITY, MI — Crews hope to replace 1950s-era sludge piping for Bay City's wastewater operations soon.

The Bay City Commission at its Monday, June 3 meeting could OK the pipe's replacement for \$686,800, which would be installed by the bid-winning business, Bay City's Shaw Contracting Co.

The piping failed three times in the last four years, and after officials decided not to fix the problem by adding a new pump station, it was determined that replacing the piping with larger pipes was the best remedy, city records show.

The commission meeting is scheduled for 7:30 p.m. at the Pere Marquette Depot, 1000 Adams.



Michigan Facility Achieves Phosphorus Removal Goals

August 06, 2013



Cass County WWTP uses biological process technology to comply with strict effluent requirements

The Cass County, Mich., Lakes Area Sewer Authority (LASA) wastewater treatment plant is meeting its phosphorus removal needs by utilizing Schreiber's Continuously Sequencing Reactor (CSR) biological process technology combined with the company's compressible media filter, the Fuzzy Filter, for tertiary filtration.

LASA is an activated sludge facility utilizing biological nutrient removal (BNR), clarification, tertiary filtration, ultraviolet disinfection and post-aeration technologies to provide a high-quality effluent. The initial design was for 0.25 mgd average daily flow and includes provisions that allow the plant to be expanded to 1 mgd. LASA experiences extremely varying flows, from 3,500 gpd in the winter to over 175,000 gpd during the summer. Also, the plant receives up to 10,000 gpd of septage. The plant is designed to discharge into a trout stream and must maintain a continuous total phosphorus effluent of less than 0.2 mg/L in the summer.

Heating up in the summer

The biological process consists of a Schreiber CSR system—a BNR system contained in a single basin. The CSR continuously sequences through the oxic, anoxic and anaerobic cycles. After the anaerobic cycle is complete and the next oxic phase begins, the system takes advantage of "luxury uptake" of phosphorus to reduce the amount of soluble phosphorus. Side benefits of the Schreiber CSR system include energy savings of 30% or more from 100% aeration turndown capability, low-energy mixing—2.5–3.5 hp/mg—and adjustable controls and programming with the use of Schreiber's SchreiberFlex control system.

In order to insure that LASA's summer phosphorus limit is achieved, Schreiber's Fuzzy Filters provide tertiary filtration. A high-rate (40+ gpm/sq ft) solids-capture filtration system, the Fuzzy Filter provides solids capture, and thereby any phosphorus contained therein, down to 4-micron particle size. Additionally, the Fuzzy Filter provides long media life (10+ years), low-wash water usage (< 2% on tertiary) and, due to the high rate of filtration, a small footprint (15-20% of the size of sand filters).

"I love the Fuzzy Filter," said LASA Operator Jack Niemi. "Low maintenance, easy operation, and awesome performance. We have a very strict phosphorus effluent limit, and the Fuzzy Filter has ensured that we stay in compliance."

Additional Schreiber equipment at the plant includes an aerobic digester/thickener in which the thickener can easily be converted into a clarifier (thus satisfying the state's requirement for clarifier duality), as well as stationary diffuser assemblies, blowers and control equipment installed in a sludge storage basin.

Success story

The plant—designed by Wightman & Associates, Inc. and opened in 2010—has won several awards during its short existence: the 2011 Graham Woodhouse Intergovernmental Efforts Award and two awards from the American Society of Civil Engineers—the Quality of Life Award (Southwest Michigan Chapter, April 2011) and the State Award (June 2011).

Data from the plant indicates that the CSR system removes over 98% of the influent biochemical oxygen demand and ammonia. The cyclic aeration operation of the CSR has allowed approximately 90% of the influent phosphorus to be removed "biologically" and without the use of chemicals. The Fuzzy Filters provide the final crucial step in phosphorus removal. Summer total phosphorus effluent levels at the plant have averaged approximately 0.1 mg/L.

"Combining Schreiber's Continuously Sequencing Reactor with the Fuzzy Filter helped the Lakes Area Sewer Authority meet a low phosphorus effluent limit (0.2 mg/L) and lowered operational cost due to reduced aeration usage and chemical dosing," said Alan Smaka, an engineer with Wightman & Associates.



BIOSOLIDS
An Effort in Fertility



Will Leoni Township hand over its wastewater treatment plant to a regional authority after withdrawing from entity?



By Lisa Satayut| Lsatayut@mlive.com
July 18, 2013 at 5:02 PM

JACKSON, MI – With the temporary withdrawal of Leoni Township from the Leoni Regional Utility Authority, members are trying to figure out how it will impact the authority and its plan to assume responsibility of the township's sewer plant.

The regional authority met for the first time Thursday, July 18 without representatives from Leoni Township.

"It begs the question for us; what are our next steps?" Jennifer Coe, the chairwoman of the LRUA said at the meeting. "We have a business plan but can we move forward with that without them at the table? It's their plan."

Coe is referring to the LRUA's business strategy which includes a plan where Leoni Township would turn over its wastewater treatment plant to the regional authority until the bonds are paid off on the \$32 million facility.

The 13 local governments served by Leoni's treatment plant are part of the authority, which would assume responsibility for the plant and the sewage system.

Leoni is now responsible for operating and maintaining the treatment plant and has been at odds with other local governments over rates and billing issues.

“We can move forward with other issues but at some point...we don’t know how long the lawsuit will even take but we will run out of things we can do without them at the table,” Coe said.

The Leoni Township Board of Trustees unanimously voted to withdraw from the authority until lawsuits are settled with Columbia, Hanover and Liberty townships.

In April 2012, Leoni Township filed a lawsuit in Jackson County Circuit Court against Columbia, Hanover and Liberty townships arguing the townships should be paying a share of the southern regional interceptor bond debt. The SRI is a sewer line that transports wastewater to the Leoni Township Wastewater Treatment Plant and serves the three townships. The original bond, with interest, was \$7.24 million and is spread over 20 years.

A second lawsuit, filed the same day, claims that Columbia Township has under-billed its residential customers and Leoni has suffered more than \$250,000 in damages as a result.

The 13 local governments served by Leoni’s treatment plant are part of the Leoni Regional Utility Authority. Each township supervisor has a vote on the board but Leoni Township gets two votes.

Some members suggested a name change for the authority while others thought it would be a “childish” move.

Liberty Township Supervisor Jim Spink said communication between Leoni Township officials and regional authority members needs to take place to move forward with the plan.

“At some point we need to get them to engage. We are not trying to take over but we have opinions on what we feel is right. We are partners in this,” Spink said.

Leoni Township Supervisor Todd Brittain was not immediately available for comment.



BIOSOLIDS
An Effort in Fertility



Around the Great Lakes

Ohio

The Columbus Dispatch

Fish Kill Traced to Untreated Ammonia in Wastewater

By Holly Zachariah

The Columbus Dispatch Friday July 19, 2013 3:11 PM

After several days of cleanup, the Ohio Environmental Protection Agency says it now knows what killed more than 3,000 fish in Madison County on Sunday: The London city sewer plant dumped ammonia-tainted water into the stream.

And that water, which contaminated nearly 6 miles of Oak Run, initially came from the Scotts Miracle-Gro fertilizer plant in Marysville, the EPA says. The discharged water apparently contained no trace of pesticide or fertilizer, however, investigators say.

Someone called the EPA’s tip line about the dead fish in the creek, which runs through London, on Sunday. Someone from the city’s plant self-reported the incident that same day, said EPA spokesman Mike Settles.

The state said London officials have been “proactive and cooperative,” in the investigation.

Aerators were placed along Oak Run in several places to increase oxygen levels and decrease the ammonia levels in the stream. The cleanup finished on Thursday.

The EPA said that Scotts trucks in what is labeled as “rinse water” to the London plant regularly. In the past, it has been pretreated at the plant and has been discharged into the stream without incident.

Why the plant discharged the water with too-high ammonia levels this time remains under investigation, officials said.

Dan Leavitt, superintendent of the London sewer plant, said he could not comment on the fish kill. He also wouldn’t

say how much material Scotts trucks in regularly.

Marysville, where the Scotts plant is located, is not equipped to handle trucked-in wastewater, said John Mitchell, the city's public service director.

The Ohio Department of Natural Resources, which also is investigating, said the high ammonia levels killed 3,219 fish and other aquatic wildlife in the stream, including small mouth bass, darters, minnows, crayfish and sunfish.

ODNR spokesman Mark Bruce said the department will determine how much each was worth and someone will be required to pay a certain value for each fish killed as well as pay for the cost of the investigation.

Fines and penalties could also be levied.

Lance Latham, a Scotts corporate spokesman, said the company was notified of the fish kill on Tuesday. The company is cooperating with authorities, he said.

The state says the rinse water, described as a byproduct of the fertilizer process at the plant, is nutrient-rich. Typically, the treatment process at the plant filters out the ammonia and the clean water is what is discharged.

Latham said he didn't know how much rinse water Scotts hauls to London but he said they only started trucking the material in earlier this summer. He said that London approached Scotts about taking the water.

The EPA says the London plant has the proper permits to take the water.

Tracking phosphorus fresh from the farm

By Spencer Hunt

The Columbus Dispatch Sunday May 26, 2013 9:03 AM

PAULDING, Ohio — An early May storm that soaked Paulding County cleared up nearly a day ago, and the drains buried beneath Terry McClure's farm fields are doing their job.

The white plastic pipe that funnels water into a ditch along County Road 48 helps keep the 4,000 acres of soft, red winter wheat from becoming a swamp.

Drainage tiles are doing the same thing beneath thousands of fields across the county and state.

But this pipe is different. It is fitted with a tube that sucks a portion of the drain water into a sampling bottle.

A few yards away is another device that samples storm water that flows along the top of the field toward the same ditch.

For at least the next three years, rainwater runoff from this field and 29 others across Ohio will be collected and tested. They'll help a team of scientists from Ohio State University and the U.S. Department of Agriculture measure how much phosphorus it contains.

Phosphorus is a byproduct of manure and fertilizers in farm runoff water. It's the stuff that is finding its way into Ohio lakes, including Lake Erie, Buckeye Lake and Grand Lake St. Marys, where it helps blue-green algae grow into toxic blooms that threaten wildlife and billions of dollars in tourism.

The study could be key to devising plans to reduce phosphorus runoff from farms. Farm groups, including the Ohio Soybean Council, the Ohio Corn & Wheat Growers Association and the Ohio Farm Bureau Federation, have matched a \$1 million USDA grant to fund the effort.

"We have a big audience. A lot of people are watching this very closely," said Kevin King, a hydrologist in the U.S. Department of Agriculture's Agricultural Research Service. Scientists have long known that farms are a prime source of dissolved phosphorus that winds up in lakes.

Heavy spring rains in 2011 flushed 473 tons of phosphorus down the Maumee River to Lake Erie, according to stream monitors kept by Heidelberg University's National Center for Water Quality Research.

That summer, a record algae bloom stretched from Toledo to Cleveland. Last year, the bloom was 90 percent smaller because of near-drought conditions that resulted in just 69 tons of phosphorus reaching Lake Erie.

Among the questions that continue to bedevil researchers are how much phosphorus each farm contributes and which methods to keep it out of streams work best. The new study should help.

"It's pretty important from several respects, not the least of which is there just hasn't been much of this work done," said Peter Richards, senior research scientist at Heidelberg.

Elizabeth Dayton, an OSU soil scientist, said she wants to see how different soils and crops affect the amount of phosphorus in runoff. Dayton and King both said they'd like to get samples from fields that grow wheat, corn and soybeans in subsequent growing seasons. Each field is monitored for organic content, soil texture and phosphorus amounts.

Some farmers already use conservation practices to limit fertilizer runoff, including planting grass along ditches to help soak up phosphorus. Others use soil tests and computerized field mapping to try to limit the amount of fertilizers to what the crops require. "What we don't know is how much (phosphorus) savings come with each practice," Dayton said.

Samples taken from these types of fields should help determine which is most effective at containing phosphorus, the researchers say.

Farmers who participate in the study will have to supply information about drainage practices, manure and fertilizer applications and when they plant and reap their crops.

McClure said he's happy to participate. "We need to better understand what our part of the problem is," he said. One of the ultimate goals of the research is to refine Ohio's phosphorus risk index, which many farmers use to estimate how much fertilizer or manure they can safely put on fields to help grow crops.

"We'd like to give the farming community not just one thing to do but about five things that would help," said Jeff Reutter, the director of Ohio State's Sea Grant Program and Stone Laboratory on Lake Erie. "The one that I promote probably the most is incorporating the phosphorus into the soil rather than simply spreading it on the surface."

Dayton and King said it will take several years of work to come up with final recommendations and data showing phosphorus concentration in runoff. Until then: "We'll have a microscope on what's coming off this field," Dayton said.

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Indiana

Your Town. Your Voice.
News~Sentinel.com

Aqua Indiana to begin year-long sewer project



News-Sentinel staff report
Friday, September 13, 2013 - 3:41 pm

Construction begins Monday on a \$4 million expansion of Aqua Indiana's sanitary sewer system in Aboite Township.

Aqua will install more than four miles of 18-inch pipe to carry wastewater and storm water runoff from lift stations and neighborhoods to Aqua's Midwest Treatment Plant off Engle road. The project is designed to minimize sewer backups and overflows following extreme summer downpours and to prepare for future growth.

Patricia Williams, Aqua's state engineer, says the additional capacity will dramatically expand the amount of wastewater the system can remove from Sycamore Hills and surrounding neighborhoods. "In exceptionally heavy rains, the existing sewer network can be overwhelmed by storm runoff and basement sump pumps improperly connected to the system," Williams said. "The existing system will remain in service. Aqua is installing the additional high-capacity lines to both address today's peak demand and allow for future growth in Aboite Township and areas of Whitley County we serve."

Construction will begin near the intersection of Covington Road and Eggeman Road, continue east on Aboite Center, then South to near Engle Road. The work is planned to minimize traffic interruptions. Road closures are not expected, but traffic may be affected in certain phases. Construction is scheduled to finish in the fall of 2014.

Aqua Indiana serves approximately 12,000 home and businesses in Aboite Township and portions of Whitley County with water and sewer service. The company employs 35 people full-time.

New Haven council tackles sewer plans

Vivian Sade | The Journal Gazette

NEW HAVEN – New Haven City Council members discussed several options Tuesday for a long-range plan to reduce or eliminate overflows of sewage and rainwater that occur during heavy rainfalls.

In May 2011, when a torrential rainfall hit Allen County, New Haven – which pumps its wastewater to Fort Wayne City Utilities for treatment – experienced sewer backups and overflows because Fort Wayne’s lines were also overloaded.

Three alternatives for preventing future overflows included retaining, treating and releasing excessive overflows; installing a tank to store the excess waters until it could be pumped to City Utilities; or installing pumps that would maximize pumping capacity and flow.

Costs for the plans ranged from about \$1 million to \$1.3 million.

Those costs include operational and maintenance costs of the treatment plants, said Keith Schlegel, the city’s director of engineering.

The plan for high-capacity pumps would not work, Schlegel said, because Fort Wayne does not have the capacity to accept the overflows.

Sewer rates would increase, although the goal was to keep sewer rates at about 2 percent of the community’s median income, a guideline recommended by the Environmental Protection Agency, said Ben Adams, of Commonwealth Engineering.

Last year, in an unusually hot and dry year with only two overflows, New Haven paid City Utilities \$1.2 million to treat its wastewater. By the end of August this year, there had been 14 overflows and treatment costs had exceeded \$1.2 million.

Since 2006, the city has absorbed five rate increases from City Utilities, Mayor Terry McDonald said.

“It’s at the point where we can simply not absorb any more increases,” McDonald said.

Tim Doyle, a resident in the 1000 block of Bell Avenue, urged the mayor and council to remember the older neighborhoods that were built on lower ground when making a decision.

In 2011, Doyle had 15 inches of sewer back up into his basement, ruining his furnace, he said.

“Now you are trying to correct the problem and taking into consideration new growth, but I don’t want my home to be the sacrificial sewer storage,” Doyle said.

“There are enough homes in my neighborhood in foreclosure and many of those foreclosures are due to that,” he said. vsade@jg.net

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South Bend Tribune.com

South Bend could save \$1 million on wastewater treatment plant

Bids come in lower than expected

June 11, 2013 | By CHRISTIAN SHECKLER | South Bend Tribune

SOUTH BEND -- The city could save more than \$1.4 million on a package of upgrades to its sewage treatment plant after bids from several contractors undershot the project's original \$7 million estimate.

The low bidder, Hudsonville, Mich.-based Grand River Construction, submitted a total estimate of just less than \$5.6 million for an overhaul of one of the treatment plant's two primary digesters -- huge vats that utilize heat and bacteria to break down and sanitize solid waste.

"The engineer's estimate was \$7 million, so I was pretty happy with those numbers," said Gary Gilot, president of the city Board of Public Works, which opened the bids Tuesday morning.

The two other bids also came under the city's estimate. Westfield-based Thieneman Construction submitted a total bid of about \$6.4 million, while Miller Davis Construction, of Kalamazoo, Mich., bid a total of just under \$6.7 million.

Al Greek, the city's director of environmental services, said the upgrades would include the replacement of all the digesters' major components, such as pipes, valves, pumps, controls and electrical systems.

As part of the project, the city also will install a new "gas-scrubbing" system designed to produce a greater amount of usable methane gas -- a natural byproduct of the process -- Gilot said.

As the digesters break down solid waste, they produce water and methane. The city uses about 50 percent of the methane to power some of its boilers and burns the rest off because it contains impurities that make it unsuitable as a power source, Greek said.

The gas-scrubbing system will give the city a higher percentage of usable gas, Greek said. In the future, the city may take some of the gas produced by the digesters and compress it so it can be used to fuel methane-burning vehicles in the city's fleet, he said.

Although not directly related, Greek said the upgrades would also allow the treatment plant to handle an increased flow of wastewater as the city embarks on a \$509.5 million plan to reduce raw sewage overflows into the St. Joseph River.

In December 2011, the city and U.S. Environmental Protection Agency entered into a consent decree that requires the city to do about \$509.5 million of work over 20 years to reduce annual overflows from the city's combined sanitary and storm water sewers during periods of heavy rain.

In recent years, 700 million to 800 million gallons of raw sewage has spilled from city sewers into the river annually, though not all of that includes solid waste, Greek said. As the city reduces overflows, more of that wastewater will flow into the treatment plant.

"The facility here has got to be ready to take that increased flow," he said.

The city is still in the very early stages of the overall \$509.5 million plan.

Greek said the city will likely select the winning bidder for the digester upgrades within 30 days. Construction could start by the end of the year and will last about two years, he said.

Although all three contractors submitted bids under the \$7 million estimate, some of the savings could go toward unforeseen extra costs, Greek said.

"This makes this project a little easier because it makes room for change orders," he said.

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National

Happy 20th Anniversary to EPA's Part 503 Rule

The residuals and biosolids industry has come a long way since February of 1993 when the Environmental Protection Agency's Part 503 regulation was entered into the Federal Register. The purpose of the Part 503 rules was to establish standards for the use and disposal of 'sewage sludge,' while protecting public health and the environment.

For starters, thanks to a dedicated effort by the Water Environment Federation, the National Biosolids Partnership, and Dr. Peter Machno, the former manager of Seattle's sludge-to-fertilizer program, our industry has transitioned away from the negative term 'sludge' to the more positive term 'biosolids'.

However, there is still a place for the term ‘sludge’ in our industry. The Part 503 regulation has a key role in clarifying the difference between sludge and biosolids. The term sludge is typically used for residuals before a stabilization process and the term ‘biosolids’ is typically used after the Part 503 criteria have been met. Therefore, the Part 503 regulations are related to the transformation of ‘sludge’, a process byproduct, to ‘biosolids’, a nutrient-rich organic material used as a fertilizer resulting in improved soil conditions and productivity.

The word ‘biosolids’ was added to the Merriam-Webster dictionary in the mid 1990s. The transition of terminology was not always easy. Public acceptance of biosolids has been controversial. In the mid-1990s, biosolids professionals spent significant resources responding to public concerns. Luckily, biosolids professionals are now spending the majority of their efforts exchanging technical information and going beyond the regulations to manage quality of life and environmental impacts related to biosolids rather than responding to public concerns.

At first, the public was leery of the use of beneficial use of ‘sludge’. Now in most areas, the value of biosolids is recognized. It seems our industry has moved beyond the worst of the public acceptance hurdle.

What will we be talking about for 30th anniversary of EPA’s Part 503 Rule? Energy recovery from biosolids? More diversity in stabilization technologies? Improved management practices?



Calendar of Events

MBT Meetings

2013

December 12, 2013, 10:00 a.m.
Bavarian Inn, Frankenmuth (Holiday Party)

2014

February 13, 2014, 10:00 a.m.
Delta Township WWTP, Lansing, MI

April 17, 2014, 10:00 a.m.
Wyoming CWP, Wyoming, MI

June 19, 2014, 10:00 a.m.
Manistee WWTP, Manistee, MI

July 24, 2014, 10:00 a.m.
Biosolids Tent @ MSU Agricultural Expo
E. Lansing, MI

September 18, 2014, 10:00 a.m.
Carl Johnson Wildlife Center, Cadillac, MI

December 11, 2014, 10:00 a.m.
Frankenmuth, MI (Holiday Party)

MBT Annual Biosolids Conference

March 11-12, 2014
Holiday Inn, Big Rapids, MI

MBT Display Events

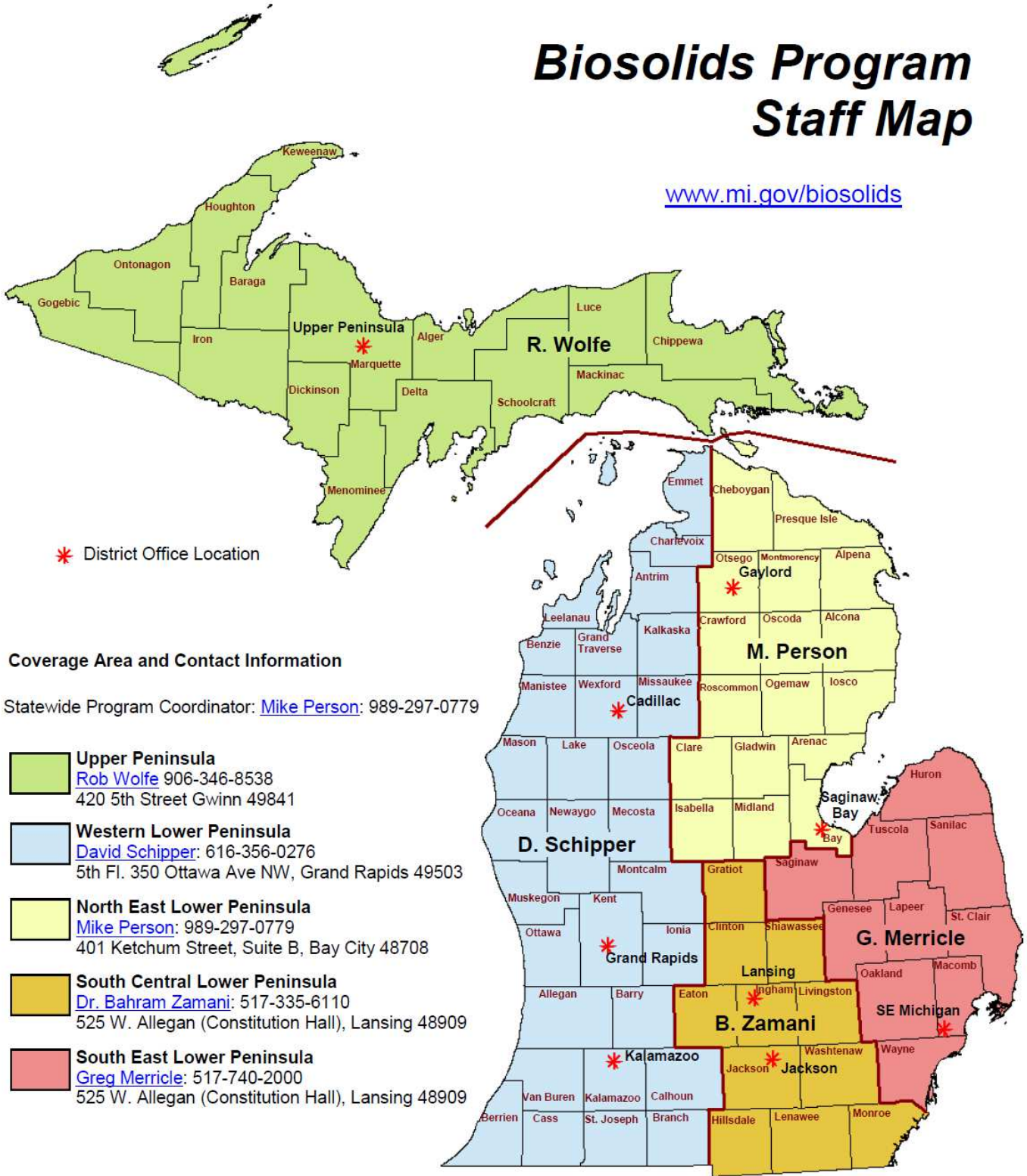
Michigan Township Association Annual Conference
January 29-30, 2014
Grand Traverse Resort, Traverse City, MI

MWEA/AWWA Joint Exposition
February 4-5, 2014
Lansing Center, Lansing, MI

MSU Agricultural Exposition
July 22-24, 2014
Michigan State University, E. Lansing, MI

Biosolids Program Staff Map

www.mi.gov/biosolids



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