

Department of Public Services

Harrison Street Facility

1415 North Harrison Street Kalamazoo, Michigan 49007-2565 Ph. 269.337.8701 Fx. 269.337.8699

February 27, 2019

Kameron Jordan
Water Resources Division, District Supervisor
Jennifer Klang
Water Resources Division, Acting District Supervisor
Michigan Department Environmental Quality
7953 Adobe Road
Kalamazoo, Michigan 49009-5026



RE: 2018 Annual Report Submittal for the Kalamazoo River/Lake Allegan Watershed Cooperative Agreement for the Reduction of Phosphorus Loading

Dear Mr. Jordan & Ms. Klang,

On behalf of the signatories of the Kalamazoo River/Lake Allegan Watershed Cooperative Agreement for the Reduction of Phosphorus Loading (hereafter known as the "Cooperative Agreement"), this report is being submitted as required in item 7 of the Cooperative Agreement. The required six (6) elements are addressed in Attachment 1. The original Implementation Plan was formally submitted on August 29, 2002 to the Michigan Department of Environmental Quality and to Region 5 of the United States Environmental Protection Agency.

This is the 17th annual Cooperative Agreement report and it outlines the activities conducted by the Point Source (PS) Group in 2018. Members of this group have been meeting and actively involved in the development and implementation of a phosphorus reduction strategy for the watershed since 1998. The PS Group agreed to meet at least twice per year once in the spring and again in the fall, as specified in the Cooperative Agreement and Implementation Plan. Joint PS Group/Implementation Committee meetings were held on January 18th, April 19th, July 19th, and October 18th, 2018. Meeting summaries can be found in Attachment 1 and the list of attendees, agendas, and meeting minutes in Attachment 3.

The PS Group successfully met the total maximum daily load (TMDL) goals for point source phosphorus discharges in 2018. During the six month TMDL timeframe the PS Group discharged a total of 22,331 pounds of the allowable TMDL goal of 46,200 pounds. The majority of the PS Group met their discharge goals by: enhancing their chemical treatment procedures; maintaining constant communication with indirect phosphorus dischargers; dedicating staff efforts and through financial support of governing boards and ratepayers. The results of their efforts are summarized in Attachment 2. Individual Point Source data can be found on https://miwaters.deq.state.mi.us/miwaters/#/external/home database.

The Point Sources and TMDL Implementation group would like to stress their gratitude to the MDEQ and EPA for allowing the group to sign on to the 2016-2021 TMDL cooperative agreement in October of 2016. The group will continue with their phosphorus reduction efforts to obtain the final goals of the Total Maximum Daily Load in the Kalamazoo River/Lake Allegan watershed.

Please consider this a full and complete submittal of the annual report by the Cooperative Agreement signatories. Please contact me at (269)-337-8644, if you have any questions regarding this submittal.

Respectfully submitted by:

James H. Cornell

Wastewater Division Manager, City of Kalamazoo On behalf of the Cooperative Agreement Signatories



Department of Public Services

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Cooperative rigiteement for the reduction of rhosphoras Boo

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ATTACHMENT 1

Summary of six (6) Key Elements for TMDL Annual Report

1. Summaries of the quarterly TMDL committees joint meetings:

In 2018 the TMDL Point Source Committee and Implementation Committee held quarterly joint meetings on January 18, April 19, July 19, and October 18 (meeting agendas, minutes, and sign-in sheets are included in Attachment 3). Key issues covered included: discussion around DEQ review and approval MS4 permits, post-construction stormwater ordinances/policies/resolutions and 319 grant progress, and potential new TMDL members; coordination of Kalamazoo River and Lake Allegan biweekly sampling plan for 2018; planning and coordination of TMDL-sponsored non-point source education activities (i.e., Kanoe the Kazoo and Krazy for the Kazoo).

For the October 2018 TMDL committee meeting, the TMDL Executive Committee organized an outreach meeting and invited various nonpoint source partners to join us. Presentation was made on Performance-based Ag Conservation Project in Gun River Watershed.

2. Summaries of non-point source activities:

Both TMDL committees worked together on several non-point source activities. In 2018, the committees worked on public education, water quality monitoring, and stormwater phosphorus loading.

- Public Education (see Attachment 6): Public education focused on public outreach events Kanoe the Kazoo and Krazy for the Kazoo. The TMDL committees, through the NPS subcommittee worked to develop an action-oriented educational campaign that all TMDL signatory communities can use to improve public education and BMP implementation. The full education campaign, called "Be RiverWise" was launched in 2016 and consists of online education about residential BMPs, local government resources, and pollution prevention and river information for educators. The TMDL committees will draw traffic to the new online materials through social media, other websites, and informational flyers.
- In 2018, the Krazy for the Kazoo river cleanup and conservation day focused on public outreach for volunteers to pick up trash from local waterways, engage in other conservation and stormwater related activities (e.g., tree planting), educate the public about water quality issues in our watershed (including the phosphorus impairment at Lake Allegan), and strengthen the public's connection with and stewardship toward their local water resources. Multiple events were during the 2018 season. These events were held in the spring, summer, and fall in Kalamazoo, Battle Creek (multiple locations), Marshall, and Charlotte.

The TMDL group sponsored the Kanoe the Kazoo event in 2018 featuring 8 different floats along waterways in the Kalamazoo River watershed. These floats were a great success and had speakers at all but a few floats. See Attachment 6 for more information. Once again the KRWC hosted a community rain barrel sale in spring of 2018 and offered a 5 week course on rain gardening.

• Water Quality Monitoring (see Attachment 5): We completed biweekly river sampling near Kalamazoo near Allegan on a biweekly basis during the TMDL season.

• Stormwater Phosphorus Loading (see Attachment 4): TMDL municipalities without MS4 permits worked this year to revise deficiencies in their stormwater plan (where needed) and began implementing the plan. With assistance from the KRWC, several municipalities held presentations with city leaders to educate them on the benefits of post-construction stormwater controls with specific stormwater performance standards.

3. Progress made on items identified in the implementation plans:

Along with many watershed partners, we continue to make progress toward the TMDL implementation plan in several areas.

4. Local Success in Phosphorus Control:

A few communities have retrofitted and/or in the process of studying or installing enhanced biological nutrient removal systems in their WWTP to enhance phosphorus removal. The success of the PS group is evident in the continued reduction of point source total phosphorus loadings to Lake Allegan. During the six month TMDL period in 1998 the Point Source Group discharged a total of 51,663 lbs; in 2010 we discharged 23,645 lbs, in 2011 we discharged 17,741 lbs and in 2012 we discharged 24,190 lbs, in 2013 we discharged 20,826 lbs, in 2014 we discharged 27,270 lbs, in 2015 we discharged 24,151 lbs, in 2016 we discharged 27,390 lbs, in 2017 we discharged 24,672 lbs, in 2018 we discharged 22,331during the same six month period. The Lake Allegan inlet had a concentration in 1998 of 102 ppb, in 2018 12 biweekly samples during the TMDL season from the M-89 bridge (lake inlet) were analyzed with an average concentration of 91 ppb. Summaries of the Point Source results can be found in Attachment 2.

The total Point Source pounds for 2018 were 48% of the MDEQ's set goal of 46,200 pounds for the Point Sources to the Kalamazoo River during the April through September timeframe. The Point Sources and non-point sources continued working on annual watershed wide stream cleanup projects in 2018; vegetative management strategies; various stormwater management projects; and dedicated many hours to various committees, activities, public education; projects promoting water quality watershed objectives and meetings to assist in drafting the stormwater deliverables within the 2016 TMDL cooperative agreement. See Attachment 4 for summaries submitted by various PS discharges that detail their various projects, phosphorus loadings, and non-point source activities.

5. Summary of the Point Source phosphorus effluent data and control methods:

See Attachment 2 for a summary of the Point Source Groups total 2018 phosphorus loading to the Kalamazoo River and the report prepared by K&A on the Kalamazoo River/Lake Allegan TMDL Point Source Phosphorus Load Analysis: 1998-2018. Individual Point Source effluent data can be accessed on https://miwaters.deq.state.mi.us/miwaters/#/external/home. (Note: In 2016 the Point Source facilities discontinued recording their monthly loading data to www.kalamazooriver.net and began using MiWaters exclusively). Most facilities have optimized operational techniques to meet/or exceed the phosphorus discharge goals. The major phosphorus control methods continue to be chemical in nature, although biological nutrient removal systems are showing high phosphorus removal capabilities with the anaerobic, anoxic and aerobic zone cost efficient-green treatment technologies retrofits within WWTP secondary systems.

6. Summary of any locally derived watershed monitoring data, including trend data, as implementation proceeds:

Point source data found at https://miwaters.deq.state.mi.us/miwaters/#/external/home. Attachment 5 contains a copy of the Point Source's data conducted at various locations on the Kalamazoo River.

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Attachment 2

2018 Point Source Phosphorus Loading Summary's

TMDL Status

Prepared by

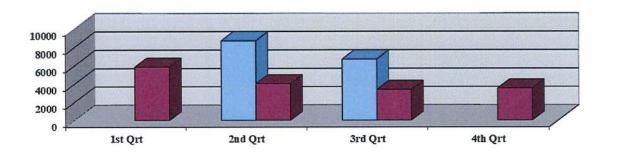
Point Sources

ATTACHMENT 2

Summary of Total Phosphorus Loadings for Point Source Signatories as of December 31, 2018

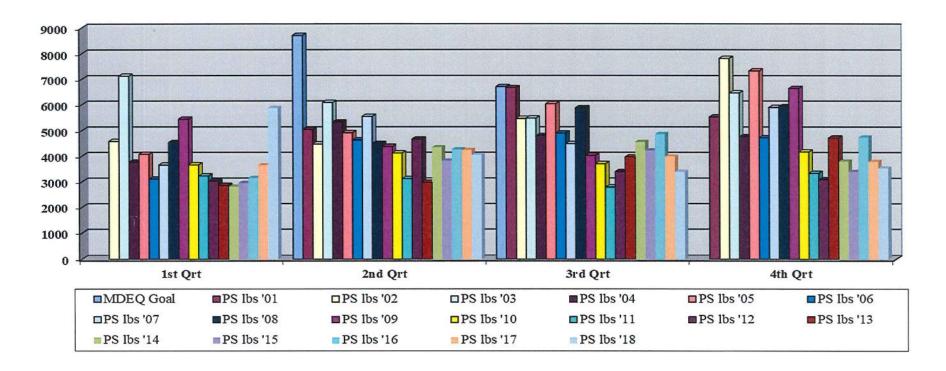
							int Sour	ce (PS)										MD	EQ PS Goals
Month						To	tal Load	ling (lbs)	in the second									Tota	al Loading (lbs)
				100 CD 10						2010		2012	2012	2011		2016	2015	2010	m1 (D)
0220	<u> 2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	2012	<u>2013</u>	<u>2014</u>	2015	<u>2016</u>		2018	\underline{TMDL}
Jan		5538	6666	3878	4,189	3,453	3812	4574	5371	3560	2931	2745	3372	2758	3169	3102		4054	
Feb		4179	7114	3497	3,832	2,733	3108	5311	4702	4044	3142	2693	2488	2555	2615	3164		8784	
Mar		4029	7578	3932	4,191	3,138	4041	3726	6250	3384	3615	3657	2709	3120	3081	3190	3831	4770	
	10000 100 0000000		100000000000000000000000000000000000000																0.700
Apr	4609	4146	6369	4852	4,521	4,544	3964	5796	5510	4030	3747	4128	2859	3864	3483	4364	4209	3927	8,700
May	5768	4776	6086	6053	5,238	4,382	4695	3260	3071	3452	3059	4482	2629	3954	3922	4637	4249	5173	8,700
June	4757	4508	5791	5088	4,983	4,971	7974	4429	4561	4883	2558	5377	3443	5766	4064	3794	4253	3040	8,700
												00.00							2011
July	8021	4681	5560	5541	5,363	5,575	5773	4636	4177	4132	2503	3348	4739	4829	5087	4533	4112		6,700
Aug	5554	6033	5291	4502	5,454	5,522	4282	6221	4002	3960	2831	3521	3468	3831	4279	5567	4876		6,700
Sept	6393	5677	5575	4356	7,274	3,609	3418	6758	3893	3029	3043	3334	3688	5026	3316	4495	2973	2755	6,700
Oct	5128	6859	6147	4680	7,893	4,594	6133	7172	7346	5190	5121	3586	6958	5893	3388	6706	3868	4341	
Nov	5562	7703	6420	4754	7,582	4,774	5948	5758	6448	4410	2407	2446	3584	3185	3195	4449	3820	2697	
Dec	5889	8873	6806	4855	6,494	4,809	5594	4833	6106	2914	2498	3227	3609	3188	3608	3068	3668	3557	
Reportin	g																		
Facilities	200	27	27	30	26	26	26	25	23	23	22	20	20	24	21	21	21	21	

2018 Point Source Average Phosphorus Discharges in pounds verse Point Source Kalamazoo River/Lake Allegan Total Phosphorus Goal for Point Sources.



PS MDE Q Goal **PSLbs**

2001-2018 Point Source Average Phosphorus Discharges in pounds verse Point Source Kalamazoo River/Lake Allegan Total Phosphorus Goal for Point Sources.



^{*}One hundred year flood occurred during September of 2008. Many plants reached/exceeded maximum hydraulic capacity.

TMDL Status

Prepared by

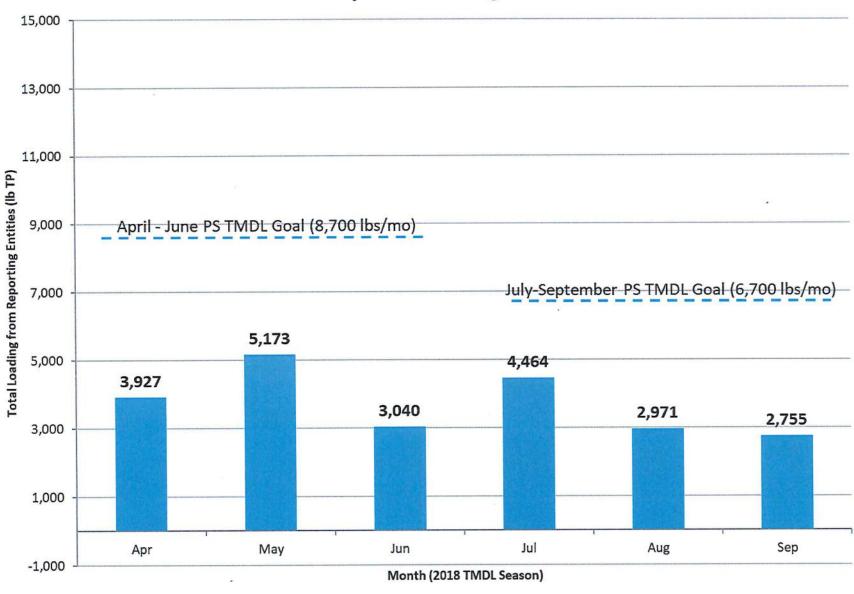
Kieser & Associates

2018 Kalamazoo River Point Source TMDL Summary

	January	February	March	April	May	June	July	August	September	October	November	December
A.M. Todd	13	6.5	5.9	4.5	3.6	8.0	2.8	7.0	2.3	3.5	6.4	5.5
Albion WWTP	182	267	135	163	271	160	92	186	119	179	179	112
Allegan Water Treatment Plant	5.1	4.6	3.5	3.5	6.8	7.8	7.3	5.6	4.0	4.2	4.0	5.7
Allegan WWTP	168	111	112	72	88	113	73	43	36	49	43	72
Battle Creek WWTP	635	1,298	1,021	1,269	864	1,138	2,140	525	390	953	665	1,429
Bellevue WWSL	11	19	19	17	24	22	19	16	17	17	16	16
Charlotte WWTP	138	140	172	171	190	122	153	93	115	138	111	129
Concord WWSL					0	0	0	0	0	0	0	0
Gun Lake Sewer Authority	10	8	10	10	9	11	10	26	43	26	21	17
Homer WWSL					0	0	0	0	0	0	0	0
JBS Plainwell	199	187	239	209	143	206	201	217	201	125	209	174
Kalamazoo WRP	1,652	6,024	1,763	1,285	2,388	1,050	1,046	1,379	1,309	1,535	777	910
Marshall WWTP	320	134	145	152	202	73	184	81	80	47	119	73
Olivet WWSL			442		500	0	0	0	0	430	25	155
Otsego Paper, Inc.	609	459	408	466	342	0	417	318	345	419	452	384
Otsego WWTP	32	42	59	36	57	28	32	24	41	30	24	32
Perrigo Co.	34	9	44	32	26	32	35	20	25	26	20	13
Plainwell WWTP	43	74	12	35	56	64	48	27	25	26	21	27
Village of Springport			178		0	0	0	0	0	330	0	0
Village of Parma			0		0	0	0	0	0	0	0	0
WestRock California Inc. (Rock Tenn)	3.9	1.4	3.0	1.1	2.8	4.7	4.6	3.9	2.9	3.7	4.3	4.3
Monthly Totals:	4,054	8,784	4,770	3,927	5,173	3,040	4,464	2,971	2,755	4,341	2,697	3,557
PS TMDL Goal:	NA.	NA	NA	8,700	8,700	8,700	6,700	6,700	6,700	NA	NA	NA

TMDL Season	Calendar Year		
28	69		
992	2,045		
35	62		
425	980		
6,325	12,326		
115	212		
843	1,670		
0	0		
110	202		
0	0		
1,177	2,310		
8,457	21,118		
772	1,610		
500	1,552		
1,888	4,619		
220	439		
170	314		
255	458		
0	507		
0	0		
20	40		
22 221	E0 E22		

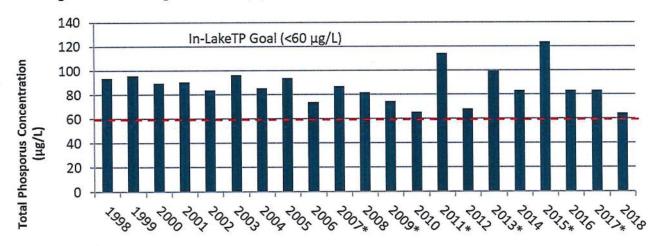
Point Source Total Phosphorus Loading for 2018 TMDL Season



How are we doing on TMDL goals?

Summary of Water Quality Indicators for the Lake Allegan/Kalamazoo River Watershed through 2018





^{*} denotes years when data were collected by TMDL partners (Kalamazoo Water Reclamation Plant and Allegan Treatment Plant

Figure 2. Lake Allegan Summer (April-September) Water Clarity (as Secchi Depth)

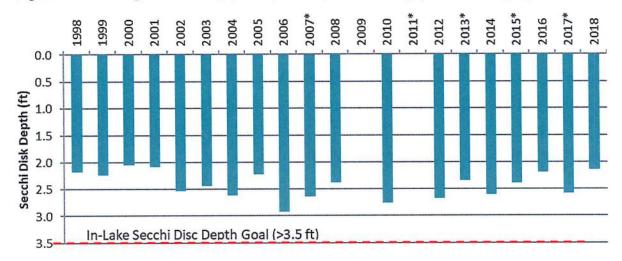


Table 1. Percentage of 2018 Lake Allegan Bottom Samples with Dissolved Oxygen Level above the In-Lake Goal (as collected by Kalamazoo Water Reclamation Plant and Allegan Treatment Plant)

Month	Number of Samples	Lake Bottom Samples Achieving In-Lake DO Goal (> 5 mg/L)
April	5	60%
May	5	100%
June	5	60%
July	5	80%
August	5	80%
September	5	100%
Season Total	30	80%

Figure 3. Lake Allegan Summer (April-September) Monthly Average Concentrations for Total Phosphorus

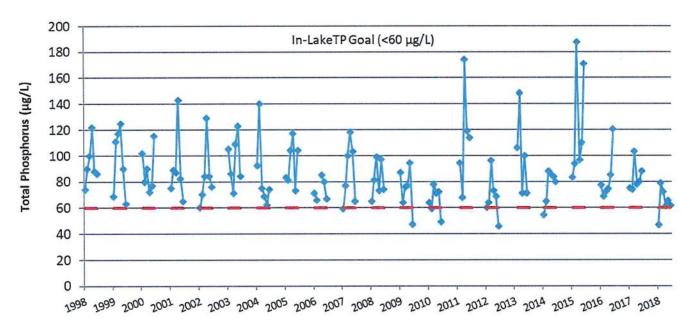


Figure 4. Lake Allegan Summer (April-September) Monthly Total Phosphorus Loading (All Sources - NPS & PS)

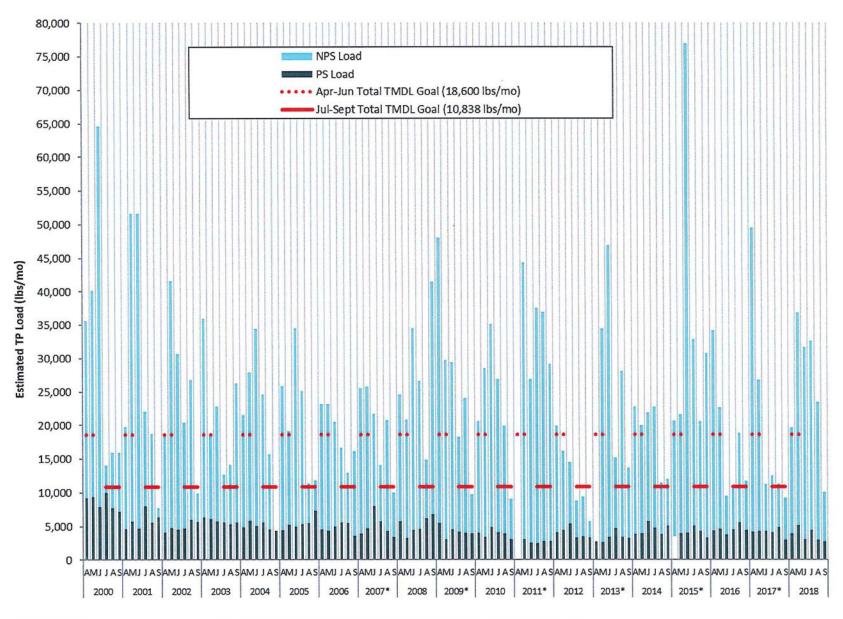


Figure 5. Lake Allegan Summer (April-September) Monthly Total Phosphorus Loading (All Sources - NPS & PS)

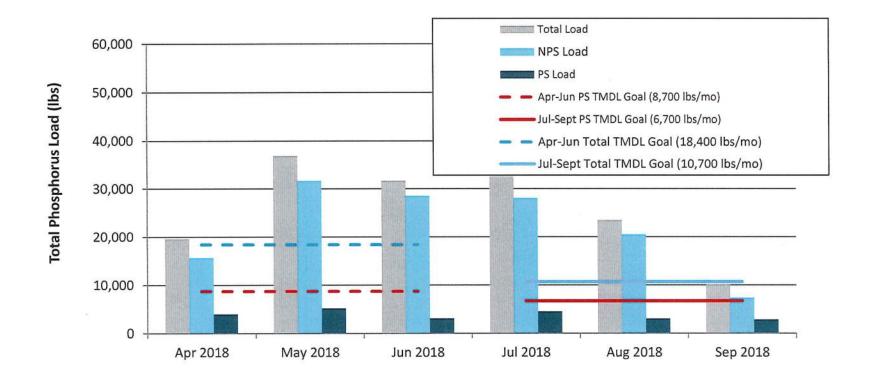
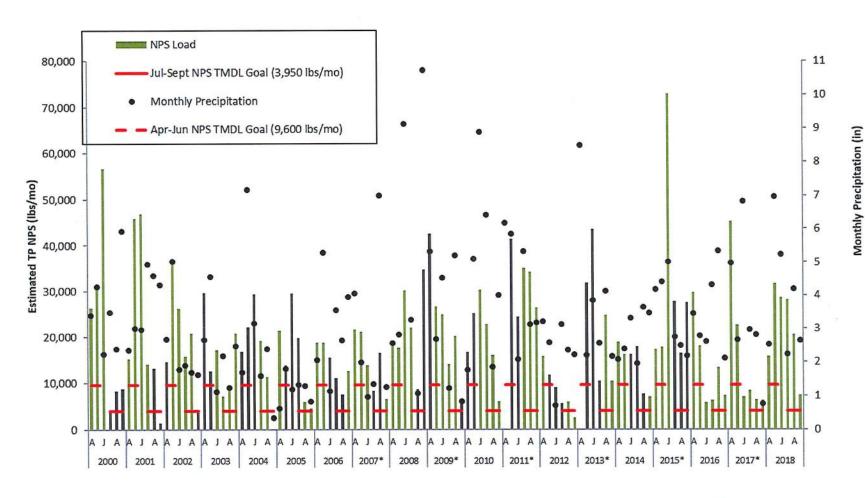


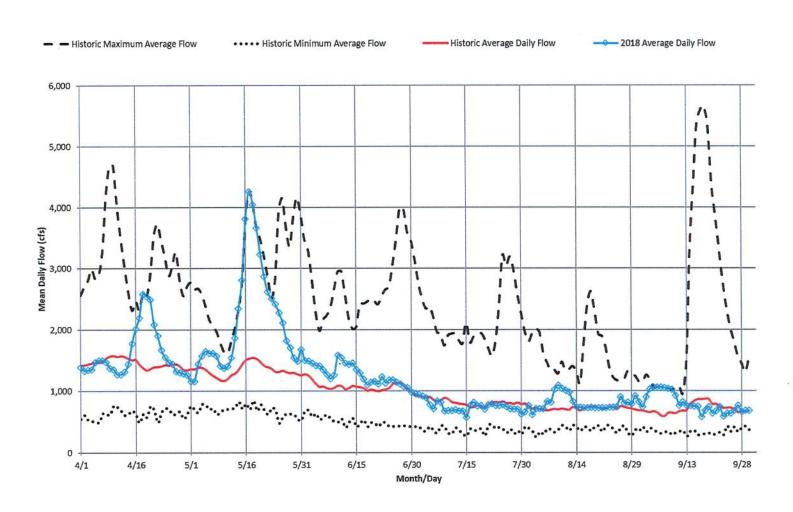
Figure 6. Lake Allegan Summer (April-September) Monthly Total Phosphorus (NPS) and Precipitation



^{*} denotes years when data were collected by TMDL partners (Kalamazoo Water Reclamation Plant and Allegan Treatment Plant

Figure 7. Lake Allegan Summer (April-September) Daily Flow Data

Historic TMDL Season (Apr-Sep) Flow Data for Comstock Dam (1998 - 2018)



Attachment 3

2018 Joint Point Source & Implementation Committee

Meeting Attendance List, Agenda's, & Meeting Minutes

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source \ Implementation Committee Joint Meeting



January 18, 2018 9:00 - 11:00 AM

REGULAR LOCATION: City of Kalamazoo Water Reclamation Plant 1415 N. Harrison, Kalamazoo MI 49007

Meeting Agenda

Call to order

Alec Egnatuk

Introductions

All

Approval of agenda

Alec Egnatuk

Approval of meeting minutes

Alec Egnatuk

Point Source Portion of Meeting

1. 2018 Budget Report

Jamie McCarthy

2. Annual Report, requirements

Janelle Hohm, Jim Cornell

3. DEQ updates

Janelle Hohm

4. 2017 TMDL Season PS discharges

Brian Boyer

Implementation Committee Portion

1. Non-Point Source Committee

Jamie McCarthy

- Kanoe the Kazoo
- Phosphorus infographic poster
- Rain barrel sale 2018

2. MS4 membership, update

Jamie McCarthy

Other Business

All

Date, Time and Location for Next Meeting

Alec Egnatuk

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source \ Implementation Committee Joint Meeting



January 18, 2018 9:00 - 10:00 AM

REGULAR LOCATION: City of Kalamazoo Water Reclamation Plant 1415 N. Harrison, Kalamazoo MI 49007

Meeting Agenda

Call to order

Alec Egnatuk

Introductions (see sign-in sheet)

All

Approval of agenda

Alec Egnatuk

Jim Cornell made a motion to approve the agenda, motion supported by Frank Knowles, motion approved.

Approval of meeting minutes

Alec Egnatuk

Phil Smith make a motion to approve the minutes from the October 2017 meeting, motion supported by Jim Cornell, motion approved.

Point Source Portion of Meeting

1. 2018 Budget Report

Jamie McCarthy

Jamie McCarthy presented the group with a copy of the year-end financial report for 2017. The remaining carry-over balance for the year was \$382.75 in the Point Source account and \$1,011.71 in the Nonpoint Source (NPS) account. The NPS carry-over is higher than normal because the committee chose not to produce a Krazy for the Kazoo brochure in 2017. The extra funds may be useful in 2018 as we anticipate working with a new graphic designer for the public education materials.

2. Annual Report, requirements

Janelle Hohm, Jim Cornell

Signatories should provide a copy of their individual annual reports to Jim Cornell by February 7, 2018. The reports should include discharge reports pertaining to phosphorus and stormwater activities. Cornell will compile and submit the full report to MDEQ on behalf of the TMDL signatories by February 28, 2018.

3. DEQ updates

Janelle Hohm

Janelle reminded industries that annual reports should include efforts to reduce phosphorus and stormwater discharges from their properties and operations. Municipalities should describe stormwater activities including pollution prevention/good housekeeping measures, public education efforts, update on ordinances and post-construction stormwater standards.

4. 2017 TMDL Season PS discharges Brian Boyer
Brian made an announcement that he is leaving Kieser & Associates for another position in Jackson, MI. Patty Hoch-Melluish from K&A will be filling in his role for the TMDL committee. Brian provided the group with a summary of PS discharges during the TMDL growing season in 2017. Collectively, the group was below the April-June PS goal of 8,600 lbs TP/mo and the July-September PS goal of 6,700 lbs TP/mo. The lowest month of collective discharges was September at 2,973 lbs/mo.

Implementation Committee Portion

1. Non-Point Source Committee

Jamie McCarthy

• Kanoe the Kazoo

Jamie provided a handout to the group with a summary of the different public education opportunities for 2018. The group is currently looking for municipalities and partners to host Kanoe the Kazoo floats. Currently, the Battle Creek/Marshall group are planning a paddle for August and the Four Township Water Resource Council has shown interest in hosting a float. The Kalamazoo River Watershed Council will be hosting a paddle on August 5. Interested float hosts should provide information to Jamie by March 16 to be included in the Kanoe the Kazoo brochure.

- Phosphorus infographic poster
 Jamie will order infographic posters for the signatories and other partners to post in visible locations (e.g., city hall or other locations where residents pay utility or tax bills).
- Rain barrel sale 2018

The City of Battle Creek will be holding their annual rain barrel sale with pick-up scheduled for June 22, 2018. Other municipalities interested in hosting a similar sale for their residents should contact Jamie.

MS4 membership, update Jamie McCarthy
 No MS4 permittees have contacted Jamie about joining as a formal member of
 the TMDL. Kalamazoo County Drain Office is still interested in parting on
 education activities.

Other Business All

Date, Time and Location for Next Meeting

Alec Egnatuk

Alec will look to arrange a meeting space for the TMDL committee in Marshall for the April 2018 meeting. An email will be sent once arrangements are finalized.

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source \ Implementation Committee Joint Meeting



Alec Egnatuk

April 19, 2018 9:00 – 11:00 AM

LOCATION: City of Marshall Public Services Building, Training Room 900 S. Marshall Ave., Marshall

Meeting Agenda

Call to order

Introductions All

Approval of agenda Alec Egnatuk

Approval of meeting minutes Alec Egnatuk

Point Source Portion of Meeting

1. 2018 Budget Report Jamie McCarthy

2. Annual Report submittal Janelle Hohm, Jim Cornell

3. DEQ updates Janelle Hohm

4. 2018 TMDL sampling season All

5. 2017 TMDL water quality presentation Patty Hoch-Melluish

Implementation Committee Portion

1. Non-Point Source Committee Jamie McCarthy

• Kanoe the Kazoo schedule

• Phosphorus infographic poster

• Rain barrel sale - 2018

Watershed Topic - Stream Restoration

Presentation: Rice Creek Habitat Project Greg Potter, Kalamazoo Valley Chapter Trout Unlimited

Other Business All

Date, Time and Location for Next Meeting Alec Egnatuk

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source \ Implementation Committee Joint Meeting



July 19, 2018 9:00 - 11:00 AM

<u>LOCATION</u>: City of Kalamazoo, Water Reclamation Plant Conference Room A 1415 Harrison, Kalamazoo MI 49007

Meeting Agenda

Call to order

Alec Egnatuk

Introductions

All

Approval of agenda

Alec Egnatuk

Approval of meeting minutes

Alec Egnatuk

Implementation Committee Portion

1. Non-Point Source Committee

• Kanoe the Kazoo schedule

Jamie McCarthy

• Krazy for the Kazoo – planning

All

• Rain barrel sale – 2018

Lizzy Paul

Point Source Portion

1. Quarterly Budget Report

Jamie McCarthy

2. DEQ updates

Janelle Hohm

3. 2018 TMDL sampling - progress check-in

All

4. 2018 TMDL wasteload allocations

Patty Hoch-Melluish

Watershed Topics - Implementation Project Snapshots

Integrated Lake Management at Fort Custer Recreation Areas

Patty Hoch-Melluish

Green Infrastructure Turned Exhibit at Kalamazoo Valley Museum

TBD

Other Business

All

Date, Time and Location for Next Meeting

Alec Egnatuk

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source/Implementation Committee Joint Meeting



July 19, 2018 9:00 - 10:00 AM

<u>LOCATION</u>: City of Kalamazoo, Water Reclamation Plant Conference Room A 1415 Harrison, Kalamazoo MI 49007

Meeting Minutes

Call to order (9:05am)

Alec Egnatuk

Introductions (see sign-in sheet)

All

Approval of agenda

Alec Egnatuk

Motion to approve agenda made by Doug Sweeris, supported by

Matt Griffith, motion to approve passed.

Approval of meeting minutes

Alec Egnatuk

No meeting minutes presented to the committee.

Implementation Committee Portion

1. Non-Point Source Committee

Kanoe the Kazoo schedule

Jamie McCarthy

Five events remaining this KTK season – Lower Crooked Lake (KBS) July 28, Marshall/Battle Creek August 4, Kalamazoo (KRWC) August 6, Kalamazoo (City, KRWC) September 15, and Olivet September 22.

Krazy for the Kazoo – planning

All

City of Battle Creek and Marshall planning events this year. City of Kalamazoo and Otsego have interest. KRWC has received several calls from groups interested in volunteering in river clean-up activities this fall. Please contact Jamie with your event information.

• Rain barrel sale – 2018

Lizzy Paul

City of Battle Creek held a rain barrel sale this spring/summer offering wholesale pricing of "upcycled" rain barrels to the community. They held the order pick-up date in late June. In total, they sold 44 rain barrels and 1 composter. Other communities interested in hosting a sale should contact Lizzy or Jamie.

1. Quarterly Budget Report

Jamie McCarthy

Jamie presented the group with a quarterly financial report. During the quarter three invoices were paid (K&A, Schlatter Design for KTK, and LKF Marketing for Phosphorus infographic poster design). Both balances for the technical consultant and nonpoint source education fund are sufficient for the year.

2. DEQ updates

Janelle Hohm

Janelle notified the group of the 319 Nonpoint Source grant cycle. The Notice of Intent letters are due August 15 and invited full proposals due October 12. New this year the DEQ will not have a priority watersheds list, which in the past was given higher ranking.

3. 2018 TMDL sampling – progress check-in

All

City of Allegan and City of Kalamazoo continue to sample the river in multiple locations twice monthly. The MDEQ is monitoring Lake Allegan monthly April – September this year. Data will be given to K&A at the end of the season for their analysis.

4. 2018 TMDL wasteload allocations

Patty Hoch-Melluish

K&A continues to use MiWaters to download PS discharge data periodically. They will be ready to provide a summary of PS discharges later this year following the end of the TMDL season in September.

Watershed Topics - Implementation Project Snapshots

Integrated Lake Management at Fort Custer Recreation Areas

Patty Hoch-Melluish

Other Business

All

Date, Time and Location for Next Meeting

October 18, 9:00 AM for an annual meeting. Any topic or speak suggestions should be sent to Alec or Jamie.

Adjourn (10:00 am)

Lake Allegan/Kalamazoo River Watershed Phosphorus TMDL Point Source/Implementation Committee Joint Meeting



October 18, 2018 9:00 - 10:00 AM

LOCATION: City of Kalamazoo, Water Reclamation Plant ***Building 24, Training Room*** 1415 Harrison, Kalamazoo MI 49007

Meeting Minutes

Call to order

Alec Egnatuk

Introductions

All

Approval of agenda

Alec Egnatuk

Approval of meeting minutes

Alec Egnatuk

Point Source Committee

1. Quarterly Budget Report

Alec Egnatuk

2. 2019 Budget, presentation & approval

Patty Hoch-Melluish

3. DEQ updates

Janelle Hohm

4. Marshall Energy Center (potential signatory)

Ken Jewison, all

5. Nominations for new committee chairs

Alec Egnatuk, all

Implementation/Education Committee

1. Krazy for the Kazoo, summaries

Participating municipalities

Watershed Topic

Performance-Based Ag Conservation Project in Gun River Watershed (Allegan Conservation District, funding from Great Lakes Commission)

Tori Harris

Other Business

All

Date, Time and Location for Next Meeting(s)

Alec Egnatuk

Meeting Sign-in Sheet

Implementation | Point Source Meeting

Name	Signature	Affiliation	Email	Phone
Alec Egnatule	DG5	City of Marshall	aggnatule ady of marshall com	269 55 8 0337
Ron Jangsa	Roll D. Jam.	City of Kulamaza	Jansec & Kalamazoocity.org	269-998-0506
Paul Har Nell	3 Polloufle.		Paul Machellise winder	269-744-778
Jeff Van Be	le getilelle	Kolmazos Cons	Savando Kol Courtion	n 384-8113
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Phil Smith	filio hos	OGVET	PSmith @ City of olivBT. ON	2693172720
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BRIAN BOYER	B. B	Kieser & Assoc.	Broyerakieser-associates.com	269 344-7117
Patty Hode Neuki	& Bety Hele Meeleer		phodrome this he Kieger associo	
Lick Keyzer	Lever From	City of Otsego	Lkyzer ecity of otsego. org	269-4924581
Bill Thorn	Br. 72-	Antoldeo	BThomps ChillFlacor's com	269-343-2603
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Meeting Sign-in Sheet

Implementation | Point Source Meeting

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Browno	- Jugaden	· City of Plainvell	boon & Plainwell, org	269-685-5153
Scott Schrooler	So Most	Porrigo	Scott-Schroderp porriseco	364/673-9098
FrankKerowle	THE.	Disgo Paper	Akualos Qusq.con	269-384-6351
Alan Pathagour	Den Follow	Bollevoc	Bellews m. o Billewe ms. wa	2657673370
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Meeting Sign-in Sheet

Implementation | Point Source Meeting

Name	Signature	Affiliation	Email	Phone
Alec Egnatule	DG	City of Marshall	agnatule egg of marshall. com	269 55 8 6337
Ron Jangger	Roll D. Tanser	City of Kalamaza	janssar@Kalamazoscity.org	269-998-0506
Paul Huckellis	Polleth.		Paul Machellis@ winder	269-744-778
Jeff Van Bell	JetyVelle	Kolmazov Court	Jdvand & Kol Coustro	384-8113
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Phil Smith	Pio Sio	OLIVET	Prinith @ City of divot. ok	2693172220
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BRIAN BOYER	B.B	Kiesen V Assoc.	Doverphieser-associates.com	269 344-7117
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Luke Keyzer	Leve him	City of otsego	Lkeyzer ecityototsago.org	269-4924581
Bill Thomas	Bo 12	Antoldeo	BThomas C WillFlacor's . Com	269-343-2603
James Cornell	1. Hlel	City of Kalenor	as cornellio falamaroscity.	org 268-337-869
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Implementation | Point Source Meeting

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Meeting Sign-in Sheet

Implementation | Point Source Meeting

April 19, 2018 | 9:00 AM - 11:00 AM

Name	Signature	Affiliation	Email	Phone
Phil Smith	Mako	CAY OF CLIVET	PSWITHE ENTOFOUNETIONS	264-317-2220
Alan Patterson	an Poten	Village of Bolleyor	Belleppe ma a Bollevie m. , not	2697633375
Alec EGNATIL .	APRICT	MARSHAU WATP	aegnatike cityofwarshall. com	2695580337
Jason Blosom =	3 - K-	Concord	jblosson@village deacord.com	517-812-7536
PaulaBatey-VanD	of Plabsty	WETRECK	Paulo J Beterp Van Dorton C wastro	1.co 269 969710
Dannan Deater	Shanna Dest	CO Kalamayer	deaters @ Kalamazovcity.	19 Z69-377-475
Jamie Mc Carth	y SMZTM	KRWC,	Krwc@kalamazooriver.on	
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Michael Conumy	Mary of	Parker Hauntin	Michael. Convaye porker com	269-692-6585
Tiffany Welsh		The state of the s	tawishe batherchinga	1 Octob Back C
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Craig Maynavd	they Meyers	JBS Plainvell	raig maynordo jbera.com	269-685-6886
Rich Bendsle	The solution	City of B.C.	rebeards lee & battlect of mis	Jun 269-966-3599
LIZZU Paul	1 80	City of B. C.	Egpaule battle creekmi, gov	25 269 - 966 - 3355

Meeting Sign-in Sheet

Implementation | Point Source Meeting

Name	Signature	Affiliation	Email	Phone	
Tabitha Boze	Camenasofe	KRM C- Jamie	tabithabore@gmail.com	(269)993-5404	
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Tiffany Welsh	Dustier	City & Batheau	1 a welshe bothe arewage	209-9640Mz	-
Jamie McCartt	y mount	KRWC	Krwc@Kalamazoovivero	m 477-1580	
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Implementation | Point Source Meeting

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Meeting Sign-in Sheet

Implementation | Point Source Meeting

October 18, 2018 | 9:00 AM - 11:00 AM

Name	Signature	Affiliation	Email		Phone	
Steve Rochow	to Machon	Cityof Kalamaza	o rochow 5 @Kalan	nazocity org	(264) 337-8365	
Alec Egnatuk	ASST	City of Marshall	agnatuke canyo	fours Kill com	269 558 0337	
Bryan Pono		City of Plainnell	I		769-685-5753	
Alpa Potter son	Olm Pattur	Village OF Billeac			2657633370	
Brian Cocham	Box Kach	City of Charlotte	bcowham@char	lottemi.org	517 543 8860	
Jason Blosian	the	Uillage of Concon	1 35/0500m@vil	lage of concor	com 511-524-	A E EB
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Ton Harris	Taki hams	Allegan Conservation				
Malisa Dinick	AM Digick	City of Kalamazur	drzickm@Kale	amorpocity or	269-337-85SO	-
Trevor Love	7-1-1-	Village of Springer	tbbd love 85@	vahoo.com	517-745-0117	
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Implementation | Point Source Meeting

October 18, 2018 | 9:00 AM - 11:00 AM

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Bill Thomas	Par fr	An tooldco	BThomas @ wild Flacons	261347-2605
Luke Keyzor	Luk Bon	City of Otseed	Llayzer @cityof otsquary	269-492 4581
Lizzy Paul	Eluhl	City of Battle Creet	Egpaul@battecreekmi.gov	269-966-3355 x 188
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Attachment 4

2018 Individual Point Source Phosphorus Control Summary's

Office of Water Utilities



Fax (269) 673-2869

350 North Street Allegan, Michigan, 49010

January 31, 2019

2018 ALLEGAN WATER AND WASTEWATER PHOSPHORUS REDUCTION

The Allegan Water Resource Recovery Facility and Water Plant met all the monthly TMDL phosphorus goals for the 2018 growing season. The Allegan Wastewater Plant underwent major renovation projects during 2010 and 2013 to provide biological nutrient removal in all of the treatment basins, Alum is available as a backup for phosphorus removal. During the 2018 growing season the Resource Recovery facility operated on basins 1, 2 and 3 these basins provide excellent biological phosphorus removal during treatment. Allegan built a new R.O. Water Plant that went on line in 2011, the Water Plant has its own NPDES discharge permit for R.O. concentrate water and iron filter backwash water, the water plant was added to the TMDL in conjunction with the Allegan Wastewater Plant.

Allegan Resource Recovery Facility staff performed bi-weekly sampling of the Kalamazoo River at two (2) locations, the recognized inlet to Lake Allegan and the discharge from the Caulkins Dam which represents the end of Lake Allegan. Allegan DPW does routine cleaning of the river front area in downtown Allegan as well as removing any trash that is noticed along the banks of the Kalamazoo River in other parts of the City. Allegan has placed a notice on its web site to remind residents of the State phosphorus fertilizer ban and to alert the City to any soil erosion problems they may see. Staff from the Allegan Resource Recovery Facility attended all four TMDL point source meetings in 2018. Allegan Resource Recovery Facility has an industrial storm water permit written into its NPDES permit, this plan was revised due to all the construction changes the last few years, this plan was approved by the DEQ in August 2014 and the treatment plant began to implement on August 18, 2014. Staff performs quarterly reviews and visual assessments of the wastewater facility, storm drains and outfall of the stormwater system. Staff also goes through quarterly training on the stormwater plan. Allegan Resource Recovery Facility received notification from the DEQ on November 4, 2013 that the Storm Water Plan submitted by August 19, 2012 as required by the TMDL agreement was acceptable and that they were to implement the plan. Allegan did begin implementing several of the storm water procedures prior to this notification; these procedures are outlined in the attached charts.

The chart below shows the phosphorus loading in pounds and target pounds for the Allegan Resource Recovery Facility and the Allegan Water Plant for the 2018 growing season months. Allegan Resource Recovery Facility reduced the phosphorus discharge from 2017 by 30% (173 pounds) and the Water plant reduced their phosphorus discharge by 27% (12.7 pounds) from 2017.

Month	Target	WWTP Actual	WTP Actual
	Pounds	Discharge Pounds	Discharge Pounds
April	130	69.7	3.46
May	173	85.1	6.74
June	146	100.5	7.71
July	118	72.9	7.22
August	152	40.3	5.61
September	101	35.6	4.0
Total 2018	820	404.1	34.7
Total 2017		577.1	47.2

Regards,

Doug Sweeris

Allegan Water Utilities Director

Jonglos Lween

Allegan

Storm Water Plan

Activity Report for 2017

The following charts list the public education, illicit discharge elimination and good housekeeping measures that were taken during the 2018 year. Allegan received a notification letter on November 4, 2013 that the Storm Water Plan submitted on August 19, 2012 was approved and met the requirements specified in the 2011 TMDL agreement.

Post Storm Water Control

The City of Allegan implemented construction Storm water control measures on July 14, 2014.

Public Education

Delivery Mechanism	Location	Material Distributed	2018 progress
Storm Water pollution control on City Web site	City web site – Plans and Reports,	Links to the State Phosphorus Ban, Home Owner brochure, Kalamazoo River Watershed Council and the kalamazooriver.net website.	The city web site and/or the Positively Allegan web site have links to the Kalamazooriver.net and the Allegan Conservation District web sites for additional information. The City web site does not have a counter for viewers. The City web sites are currently being updated; they new sites will contain the same information or more.
Link to State Phosphorus Ban	City web site – Plans and Reports,	Links to the State Phosphorus Ban, Home Owner brochure, Kalamazoo River Watershed Council and the kalamazooriver.net website.	The city web site and/or the Positively Allegan web site have links to the Kalamazooriver.net and the Allegan Conservation District web sites for additional information. The City web site does not have a counter for viewers.
Post local activities that promote storm water awareness and education	City web site, flyers at City Hall, flyers at the city booth at the County Fair council announcements, local businesses	Allegan City Hall and WRRF had Kanoe The Kazoo flyers available to the public for the 2018 season. Council made announcements for Kanoe the Kazoo. Local business displayed posters	Posters for Kanoe for the Kazoo were posted at local businesses; flyers were given out at City Hall for Kanoe the Kazoo. A count was not done on Kanoe the Kazoo materials.
Education material displays at City Hall and other public facilities	City Hall, WRRF, City Welcome center	Use Phosphorus Free Fertilizer – Michigan Dept. of Ag. Lawns Lakes and Your Community – Alliance for the Great Lakes Biosolids Recycling- WEF posted at	WRRF – 43 /41 City Hall – 28/ 20 City Welcome Center – 30 / 20 WRRF – 40 /39 City Hall – 35/25 City Welcome Center 6/ 0 WRRF 18 / 18 City Hall 18 / 0
		WWTP Practice Tips for Home and Yard	WRRF 4 / 4 City Welcome Center 14 / 8 City Hall 4/0

Ad on the big screen	Regent Theater	Some type of storm water ad / message prior to the movie. List ads displayed.	Management changed during the summer of 2014, this is still being looked into for education of storm water. No further action has been made.
Strom drain markers	City streets, storm drains	Storm drains and catch basins in Allegan are identified on the structure as going to the River or Storm drain. All new construction has these covers and any old structures that are replaced have the labels.	No catch basin grates were replaced or new this year.

Illicit Discharge Elimination

Action	Location/Department	Material Distributed / Procedures	Results / Annual report information
Provide a map and a list with all known city storm water catch basins and drains. Does not include storm drains and outlets from State trunk lines.	City DPW, WRRF	DWP staff was given the Michigan Ag. "Use phosphorus free fertilizer", "Lawn, Lakes and Your Community" brochures. The mowing crew and the parks crew were informed about monitoring the storm drain outfalls when working nearby and to check for possible cross connections to sanitary sewers by identifying water characteristics, odors and possible items that can be seen in sanitary sewage.	Map of the city storm drain is on file. Map shows State trunk line storm drains but City of Allegan does not maintain these. City Storm drains were mapped in GIS as part of our SAW grant. The DPW specifically inspected and cleaned several storm drains and catch basins throughout the City. Storm drains are monitored for possible cross connections with sanitary drains. The flow from the storm drain is observed for clarity, odor and identifiable objects that might come from a sanitary sewer cross connection. None were found in 2018.

Good house Keeping and Pollution Prevention

Action	Location/Department	Material Distributed/procedures	Results / Annual report information
Distribute education / informational material	City Hall, WTP, WRRF, DPW,	Use Phosphorus Free Fertilizer, Lawns, Lakes and Your Community	# of employees material was provided to City Hall — 6
to City Staff		brochures. Landscaping for water Quality — WWTP and Parks (DPW), Practical Tips for Home and Yard to Improve Water Quality — WWTP	DPW – 9 Water treatment plant – 3 Water Resource Recovery Facility - 8
Provide storm water and illicit discharge training and notification procedures for possible illicit discharge.	City DPW, WRRF, WTP	Verbal training to staff members by DPW supervisor and WRRF supervisor on how to and what to look for in storm water discharge to identify a possible sanitary sewer cross connection.	WRRF 8 WTP 3 DPW 5 includes Parks, mowing and street sweeping
Perform routine street sweeping, curb and gutter cleaning, storm water catch basin cleaning.	City DPW staff		All city streets are swept at least once in the spring and once in the fall. Downtown streets are swept on a weekly schedule. Additional streets are swept based on observations. Curbs and gutters are cleaned at the same time with the street sweeper. Catch basin grates are cleaned as needed during large rain events. Catch basins are assessed during rain events for flow and then latter cleaned by City Vactor truck.
Collect leaf and brush from curb side.	City DPW Staff		City of Allegan provides bi-weekly brush pickup throughout the city during spring and fall months. During the months of October and November Allegan provides weekly curb side leaf pickup. All compost material is delivered to a local tree nursery.
Wash vehicles in areas that do not drain to surface water – drain to sanitary sewer or grass areas.	DPW, Police, WRRF, WTP.	Places to wash vehicles – car wash, garage with floor drain to sanitary sewer, grassy yard that does not drain directly to river or storm catch basin.	DPW – inside barn, floor drains go to sanitary sewer. WRRF - in garage or septage truck unloading area, drains go to sanitary sewer. WTP – Garage, drains go to sanitary sewer or driveway, runoff goes to green areas. Police – Local car wash
Store materials in areas with no discharge to surface water	DPW, WRRF, WTP	Materials include: sand, dirt, stone, pavement millings, salt, and process chemicals.	DPW — Salt is stored indoors, other dirt, sand and stone are stored in containment areas with no drains. WRRF — All process chemicals are indoors, generator fuel tank is double

			walled. WTP – All process chemicals are indoors, generator fuel tank is double walled.
Use appropriate fertilizer on city grass, plantings. Soil test if using phosphorus fertilizer on grass or plantings.	DPW, WRRF, WTP, Police, all city buildings and parks that have grass and/or plantings	Use Phosphorus Free Fertilizer, Lawns, Lakes and Your Community brochures were distributed.	Allegan has gone to phosphorus free fertilizers for lawn use except new turf areas were allowed by law. Flower gardens and planting use a "Miracle Grow" type fertilizer.
Remove grass clippings from hard surfaces after mowing	DWP, WRRF, WTP, hired mowing crews	Sweep, blow grass clippings from hard paved surface back onto grass after mowing / trimming.	To the best of the mowers ability grass clippings are kept on the grass area by either directional mowing, sweeping and/or blower grass clippings after mowing is completed.
New City Stage and Riverfront Plaza	Riverfront area	Newly constructed riverfront plaza, construct to be environmentally friendly.	Designed to capture storm water in landscaping beds (rain gardens) throughout the plaza area.

City of Battle Creek

Annual Phosphorus Point Source Report and Related TMDL Contributions 2018

The Battle Creek Wastewater Treatment Plant has submitted Phosphorus loading data each month to the TMDL Point Source Tracking System. Battle Creek has maintained a reduced effluent phosphorus concentration throughout the year, exceeded the NPDES Permit requirement, as well as the commitment to the TMDL Point Source Group.

Battle Creek Wastewater Treatment Plant Staff continues to aggressively pursue reduction in phosphorus discharge, and continue using nutrients as needed to enhance better biological removal from our waste stream, and provide better control of BOD, and Phosphorus. An online Phosphorus Analyzer monitors and warns staff of increased phosphorus loading on a real-time basis. Excess Phosphorus is reduced by the use of Ferric Chloride, and was used the entire year of 2018. Battle Creek has contracted with Donhue and Associates Engineering to construct improvements necessary to significantly reduce the cost of Secondary Treatment. Along with this cost reduction will be an enhanced treatment nutrient monitoring process, as well as the installation of Biological Phosphorus Removal. Construction began in June 2016, and is due to be completed by December 2018. Phosphorus reduction 2018 was not as efficient as in the two previous years because of the Secondary Improvements construction process, 2019 will show improvement to the total reduction in phosphorus discharge to the Kalamazoo River.

Our staff continues to conduct tours of the Wastewater Treatment Plant to College and High School Science Classes. We sponsored and contributed to the Kalamazoo River Water Festival, Children's Science Festival, Carp Derby, Kanoe Kazoo, as well as Super soils Saturday.

All City Storm Water Permit inspections were conducted and training provided in accordance with the NPDES Permit in 2018. The approved Storm Water Permit is supported by a diligent staff that is committed to improvement in IDEP, and investigation of all illicit discharges that are reported. The staff also systematically inspects segments of the City Storm system each year, mapping and recording information. The Battle Creek Wastewater Division has completed an Asset Management Program which the DEQ has approved in 2018. Part of the Asset Management process will be total assessment of the entire city collection system, mapping and

televising a significant portion of the system; thus improving the integrity of collection system. In 2018 the City of Battle Creek continued collection of information on the Sanitary and Storm Sewer System to enhance asset management development.

The 2018 City of Battle Creek monthly average of pounds and concentration of Total Phosphorus Discharged into the Kalamazoo River averaged: **992 lbs/month**, **13.14 mg/l/month**.

Plant Effluent Total Phosphorus maximum monthly average 150 lbs/day is the current limit.

2018

		Concentration	Pounds
<u>Month</u>	Average (mg/l)	Total (mg/l)	Total Pounds
January	0.29	8.92	635
February	0.46	12.78	1297
March	0.40	12.45	1020
April	0.37	11.17	854
May	0.32	9.90	864
June	0.47	14.22	1137
July	0.96	29.76	2139
August	0.24	7.42	524
September	0.19	5.73	390
October	0.45	13.99	952
November	0.33	9.93	665
December	0.69	21.43	1428
Average	0.43	13.14	992

City of Charlotte

January 21, 2019

As a cooperative entity of the Kalamazoo River TMDL program, the City of Charlotte is providing the following information for our annual report as required.

The City of Charlotte continues to apply Ferric Chloride for total phosphorus removal. The City of Charlotte constantly tries to improve our application rates in order to satisfy all requirements.

Matt Griffith has been representing the City of Charlotte WWTP, on the point source committee. All required meetings have been attended.

The City has continued our partnership with the Eaton County Conservation District on many water related projects. The City, again this year, has partnered with the Charlotte Public Schools and Eaton Conservation District on the 13th annual river cleanup of the Battle Creek River and Butternut Creek in October. This year the City also continued in a cooperative effort to be involved with the Annual Science Adventure Week. This is a week long, hands —on experience for current third thru fifth graders. Activities include rocks and minerals, stream life, pollution, and ground water, to name a few.

The City of Charlotte also participated in the Olivet Community Wellness Fair. This offered an opportunity to promote pollution prevention efforts, inform the public of upcoming recycling events within Eaton County and raise awareness on environmental issues.

The City also worked cooperatively with the City of Olivet and the Village of Bellevue in hosting the Fourth Annual Kanoe the Kazoo. This event was very successful, drawing in approximately 15 participants. Information on non-point sources of pollution was handed out to all participants along with a short program and lunch at the end of the event.

In 2018, the City of Charlotte has also been working with the wellhead protection team assisting in various educational projects. We worked cooperatively with Eaton County Conservation District and Eaton County Resource Recovery to create a calendar for 2017/2018.

In 2018, the City continues to work with the Eaton County Conservation District to maintain and improve our first rain garden. The garden is located just outside the entrance to the wastewater treatment plant, and also protects the Battle Creek River. This year we are planning many projects with our various partners in water quality improvement issues. Extension of the walking trail on the Battle Creek River was also completed within 2018.

If you have any questions or need further information please do not hesitate to call.

Sincerely,

Matt D. Griffith

Superintendent of Utilities 517-543-8860 mgriffith@charlottemi.org

City of Charlotte Phosphorus Reduction Plan Storm Water Managemen



Facility Information

Name of facility: City of Charlotte Wastewater Treatment Plant

Facility Address: 1005 Paine Drive. Charlotte Michigan 48813

Facility Contact:

Name:

Amy Gilson

Title:

Public Works Director

Telephone: (517) 543-8858

Mailing Address: City of Charlotte

111 East Lawrence Avenue

Charlotte, MI 48813

Owner: City of Charlotte

Certified Operator: Matt D. Griffith

Environmental Coordinator: Britani Wisniewski

Permit Number: MI0020788

Receiving Waters: Battle Creek River

Emergency Contact: Matt D. Griffith, Superintendent of Utilities

Telephone: (517)543-8860 office (517) 231-2324 cell

City of Charlotte Phosphorus Reduction Plan Storm Water Management

TABLE OF CONTENTS

- Facility information
- . Introduction
- Background
- Objective
- Current Activities
- . Future Plans

City of Charlotte WWTP

1005 Paine Drive. Charlotte, MI 48813 Office: 517-543-8860 mgriffith@charlottemi.org

Introduction

This phosphorus reduction plan (PRP) covers the operations at the City of Charlotte Waste Water Treatment Plant. It has been developed as required under Part 1.Section A, paragraph h. of the Michigan National Pollutant Discharge Elimination System (NPDES) general permit for reduction of total phosphorus in the Kalamazoo/Lake Allegan watershed.

Point source (PS) facilities within the Kalamazoo River watershed have operated under a phosphorus total maximum daily loadings (TMDL). The TMDL caps the amount of pollutant loading each facility can discharge to a particular water body. In the case of Lake Allegan, PS's operate collectively under an aggregate waste load allocation. They also participate in a cooperative agreement with the Michigan Department of Environmental Quality (MDEQ). This agreement was signed in lieu of individual PS permit holders, reduced phosphorus limits.

Background

The City of Charlotte has participated in the Kalamazoo River/Lake Allegan water-shed TMDL since 2000. The TMDL was established to protect Lake Allegan from high nutrient levels which has resulted in violations of water quality standards. In addition to establishing the TMDL, the city is a signatory to a cooperative agreement to meet the TMDL for phosphorus. Signatories to the agreement include point source (PS) dischargers and non point source (NPS) dischargers. The signatories have agreed to participate with other PS and NPS contributors in the watershed to reduce phosphorus as necessary to meet the goals of the TMDL.

Objective

The goal of the phosphorus reduction plan (PRP) is to improve the quality of surface waters by reducing the amounts of phosphorus contained in the effluent being discharged into the Battle Creek River. Another goal is to work on some of the non point source (NPS) contributions, to also help in the reduction of phosphorus to the surface water. This will be accomplished by continuing activities outlined in the PRP as well as other activities that will be implemented in the future.

Current Activities

REPORTING: The following tables outline the activities related to stormwater management and nutrient and sediment control that the city will implement each year according to the schedule. Progress made toward activities and outcomes described in the plan will be reported each year in the TMDL Point Source Annual Report. We will provide an update on the status of planned and completed activities in table format.

SECTIONS:

This plan covers four categories:

- 1) Public Education
- 2) Illicit Discharges
- 3) Good Housekeeping and Pollution Prevention
- 4) Post-Construction Stormwater Controls

Future Plans

- Continued enforcement of the city's regulatory mechanism to control storm water quality and quantity from new development and redevelopment.
- Locate and evaluate storm water outfalls within the city.
- Work with Eaton Conservation District and County Health Department to find and eliminate illicit dischargers.
- · Continue with Public Education and Outreach.
- Train staff of Utilities Department of PRP and future activities.
- Work with USDA & Rural Development on certifying farms and encouraging BMP's for adjacent river properties.
- Continue satisfying all requirements within the City of Charlotte's Phosphorus Reduction Plan.

1.0 PUBLIC EDUCATION

	Activity	Mechanism	Materials	Schedule	Status Report 2018
1	Educate residents about Michigan's phosphorus fertilizer ban	(1) Website (2) Brochures (at City Hall)	MDARD Brochure	Spring and fall each year, corresponding to City cleanup activities	City Website
2	Educate residents about stormwater and sediment pollution at community event(s)	(1) Kanoe the Kazoo (2) River Clean- up (3) Other events Wellness night, Science Camp	Brochures or information from TMDL committee, KRWC, and MDEQ	Minimum of one event each year starting in 2015	Handed out Information on sources of non- point source pollution
3	General stormwater and TMDL education/awareness	(1) Website	Rotating topics from KRWC and TMDL committee	Links on City Facebook -2015 (permanent),	City Website
4	Advertise activities promoting stormwater and TMDL education and awareness	(1) Website (2) Newspaper	Posters, brochures, and event details for Kanoe the Kazoo, River Clean-up, Charlotte Science Camp, etc.	Annually, following event schedules	Summer 2018, posted Kanoe the Kazoo poster at City Hall
5	Participate in TMDL public education activities	Co-host Kanoe the Kazoo river float	Give non-point source pollution information to participants	Summer 2014, annually thereafter	September 22, 2018, approx 15 participants (see attached photos)
6	Encourage leaf composting, good lawn care practices, and waste disposal	(1) Website (2) Signs in park	Information about City programs	Spring and Fall	Leaf and Brush drop off at DPW.

2.0 ILLICIT DISCHARGE ELIMINATION

	Activity	Mechanism	Materials	Schedule	Status Report 2018
1	Keep records of any changes to storm sewer system and/or city owned facilities	Managed by DPW	Provide records to City Hall/Fire	On-going	On – going
2	Employee training for DPW, wastewater, and associated departments	Staff training	Excal video and materials from MS4 communities (Kzoo, BC)	Starting 2015, provide training and refresher every 2 years	Initiated in 2015. On – going
3	Locate and inspect storm sewer outfalls during dry weather	Physical inspections by City employees	Inspection form	Rotating basis, all outfalls located and inspected by 2016	Current at WWTP On – going
4	Where discharge is observed, staff will determine source of illicit discharge	Obvious source – eliminate illicit discharge Source not obvious – investigate further	Consult TMDL guidance document (Battle Creek IDEP)	As necessary whenever illicit discharge is detected	On – going
5	Eliminate illicit connections to the storm sewer system	Exercise authority under Section 68- 143(B)of the Sewer Use Ordinance	Consult MS4 communities on TMDL Committee, as needed	As necessary whenever illicit discharge is detected	On-going

3.0 GOOD HOUSEKEEPING AND POLLUTION PREVENTION

	Activity	Mechanism	Department	Schedule	Status Report 2018
1	Employee training to prevent stormwater related pollution (i.e., nutrients and sediment)	Excal training videos and KRWC presentation	DPW WWTP	Starting 2015, provide training and refresher every 2 years	On-Going – Conducted in 2017
2	Perform street sweeping	City employees use street sweeper	DPW	April – October	Street Sweeping
3	Inspect city storm sewer catch basins/facilities	Physical inspection of retention basins, catch basins, and other facilities	DPW	Regular inspection	On-going
4	Wash vehicles in areas not connected to storm sewer or surface water	(1) Wash where drains connect to sanitary, OR (2) Grassy areas not draining to surface water	DPW WWTP Fire, Police	On-going Include in employee training session	On-going
5	Leaf and brush collection, composting option for residents	Collect residential yard debris, compost at city facility always open	DPW	Once each fall. Compost site always available for residents	On-going
6	Require proper fertilizer use to protect water quality	(1) No P-fertilizers (2) Proper rates (3) Not adjacent to water	DPW	**Currently the city does not apply fertilizers to any properties**	On-going
7	Prevent runoff from WWTP & DPW lot	Inspect for runoff	WWTP & DPW Staff	2014	On-going
8	Snow pile storage areas	Do not store snow piles adjacent to surface water or near storm drains, consider using insert where drains are	DPW	Currently snow is not piled near storm drains	On-going

located near snow	
piles	

4.0 STORMWATER PERFORMANCE STANDARDS FOR NEW AND REDEVELOPED SITES

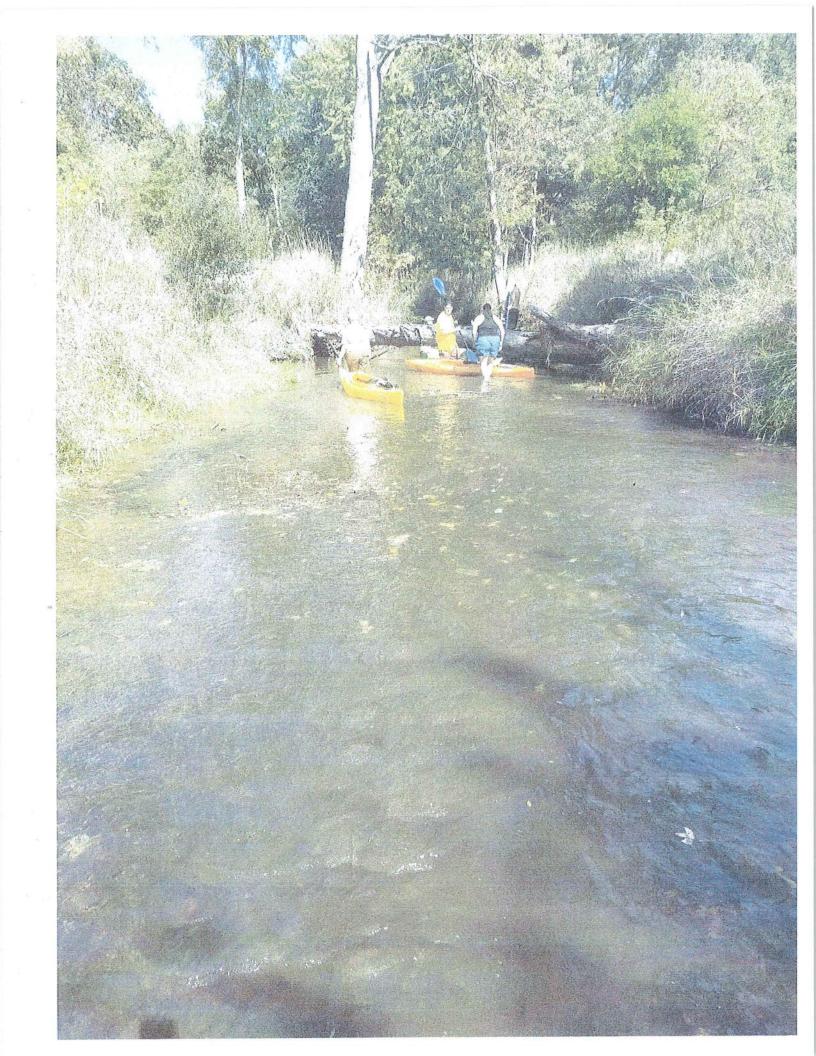
n to goody services	Activity	Details	Schedule	Status Report 2018
1	Educate city council on the need for stormwater management at new and redeveloped sites	Get resolution added to City Council agenda Ord. Revisions	2015	Completed / In Effect
2	Discuss stormwater review service and fee with Eaton County Drain Office	Fee schedule \$400 Applies to developers	2015	Completed / In Effect
3	Stormwater resolution adopted by City Council effective for all new and redeveloped sites	Resolution requiring all new and redeveloped sites to conform to Eaton County Drain Office Stormwater Rules / Performance Standards	Before April 4, 2015	Completed / In Effect

Kanoe the Kazoo Registration Form

Reservations must be made no later than September 15, 2018.

When: September 22, 2018
Time: 9:00a.m.
Place: Schrontz Memorial Park Olivet
Cost: \$10.00/person includes T-shirt and Lunch
Please make checks payable to:
City of Olivet
C/O Amy Hupenbecker
117 S. Main St.
PO Box 367
Olivet, MI 49076
T-Shirt Size (circle one) Adult S Adult M Adult L Adult XL
Adult XXL / Colors (circle one): Pink Blue
Name:
Address:
Contact Information:

If you have any questions please contact Matt Griffith @ (517)231-2324 or Phil Smith @ (269) 317-2220.



Village of Concord

Stormwater Plan

In Fulfillment of the

Kalamazoo River/Lake Allegan Watershed Cooperative Agreement for the Reduction of Phosphorus Loading, August 19, 2011

Revised March 2, 2018

Adopted

[April 8, 2015]

Facility Information

Name of Facility:

Village of Concord Wastewater Sewage Lagoon

Facility Contact:

Name:

Jason Blossom

Title:

Department of Public Works Supervisor

Phone:

517-524-8534

Email:

jblossom@villageofconcord.com

Address:

Village Hall

110 Hanover Street

PO Box 306

Concord, MI 49237

Owner:

Village of Concord

Operators:

Jason Blossom

Kevin Thomas

Permit Number:

MIG 580003

Receiving Waters:

Kalamazoo River

Emergency Contact: Jason Blossom

Emergency Phone:

517-812-7556

PURPOSE

The purpose of the Village of Concord's stormwater plan is to implement activities that will prevent excess phosphorus and sediment from entering the Kalamazoo River and other important local water resources. The plan covers pollution prevention from regular village operations, such as public works, wastewater treatment, and parks; public education; land development; and illicit discharges. It has been developed as required under Part I, Section A, paragraph h of the Michigan National Pollutant Discharge Elimination System (NPDES) general permit for reduction of the total phosphorus in the Kalamazoo River/Lake Allegan Watershed.

BACKGROUND

Point source (PS) facilities within the Kalamazoo River watershed have operated under a phosphorus total maximum daily load (TMDL). The TMDL caps the amount of pollutant loading each facility can discharge to a particular water body. In the case of Lake Allegan, PSs operate collectively under an aggregate with the Michigan Department of Environmental Quality (MDEQ). In lieu of individual PS permits with reduced phosphorus limits, PSs have agreed to work cooperatively with other watershed partners to reduce non-point sources (NPS) of phosphorus to the river.

Concord has two stormwater outfalls that discharge to the Kalamazoo River within the village limits. These discharges fall under the NPS load allocation in the TMDL which requires a 50% reduction in phosphorus loading from the 1998 baseline year. A map of the storm sewer system catch basin inlets and outfalls is included in Attachment A. The map shows that the majority of catch basins are located at the center of the village in blocks with residences and businesses. Only a small portion of these blocks have curbs. Nearly all properties within the village are connected to sanitary sewer and the public water supply.

OBJECTIVE

The goal of the stormwater plan is to make progress toward the NPS phosphorus reduction goal. We will work to accomplish this goal by continuing good housekeeping and pollution prevention activities outlined in this plan as well as public education on ways our residents and business owners can help reduce excess phosphorus from entering the river.

SECTIONS

This plan covers four required categories:

1)	Public Education	Page 5
2)	Illicit Discharges	Page 6
3)	Good Housekeeping and Pollution Prevention	Page 7
4)	Post-Construction Stormwater Controls	Page 8

REPORTING

The following tables outline the activities related to stormwater management and nutrient and sediment control that the village will implement each year according to the schedule. Progress made toward activities and outcomes described in the plan will be reported each year in our TMDL Point Source Annual Report. We will provide an update on the status of planned activities in table format.

Our community has a resolution in place requiring all new and redeveloped parcels in the village to be reviewed for stormwater management by the Jackson County Health Department. The review will ensure qualifying development conforms to the County's stormwater performance standards described in the Upper Grand River Plan.

1.0 PUBLIC EDUCATION

	Activity	Mechanism	Materials	Schedule	Status Report 2018
1	Educate residents about Michigan's phosphorus fertilizer ban	(1) Village website(2) Village newsletter to approx. 1,500 citizens(3) Brochures (at village hall)	MDARD brochure; copy for newsletter from KRWC	On-going; corresponding to Village's fall leaf pick-up	
2	Encourage leaf composting, good lawn care practices, and waste disposal	(1) Village website(2) Village newsletter	Information about village programs, including fall leaf pick-up and on-going leaf drop off at village compost site	Once annually; fall during yard maintenance/clean-up time	Offered leaf pick-up fall 2018 Village compost drop-off site open for residents
3	Educate residents about stormwater and sediment pollution at community event(s)	Concord Classic (annual summer community event held weekend in late June)	Brochures or information from TMDL committee, KRWC, and MDEQ	Once annually; minimum of one event starting in 2019	
4	General stormwater and TMDL education promoting BMPs	(1) Village website(2) Village newsletter(3) Park(s)	Pet waste bags at signage at park near Mill Pond; Rotating topics from KRWC and TMDL committee	On-going; links on website, newsletter topics three times/year On-going pet waste clean-up station	Pet clean-up station stocked with bags all year
5	Participate in TMDL public education activities	Advertise Kanoe the Kazoo and Krazy for the Kazoo events at village hall	Give TMDL information to participants	Annually	Posted in Village Office and local businesses in town

2.0 ILLICIT DISCHARGE ELIMINATION

:	Activity	Mechanism	Materials	Schedule	Status Report 2018
1	Keep records of any changes to storm sewer system and/or village-owned facilities	Managed by DPW on hard copy maps	Provide records to fire/police	On-going; updated when infrastructure is modified	Summer of 2018 added catch basin to prevent washing out of street and direct water to drainage ditch. Railroad street between Pelham and Coxon.
2	Employee training for DPW, wastewater, and associated departments	Staff training	Excal video and materials from MS4 communities (Kzoo, BC)	Starting 2015, provide training and refresher every 2 years	May 19, 2015
3	Locate and inspect storm sewer outfalls during dry weather	Physical inspections by village employees	Inspection form	Once annually	Storm sewer outfalls located and inspected on August 1, 2018 (Dry Weather)
4	Where discharge is observed, employees will determine source of illicit discharge	Obvious source – eliminate illicit discharge Source not obvious – investigate further	Consult TMDL guidance document (Battle Creek IDEP)	As necessary whenever illicit discharge is detected	None found in 2018
5	Eliminate illicit connections to the storm sewer system	Exercise authority under Section 66-122(d) under Utility Ordinance	Consult MS4 communities on TMDL committee, as needed	As necessary whenever illicit discharge is detected	None in 2018

3.0 GOOD HOUSEKEEPING AND POLLUTION PREVENTION

	Activity	Mechanism	Department	Schedule	Status Report 2018
1	Employee training to prevent stormwater related pollution (i.e., nutrients and sediment)	Excal training videos and KRWC presentation	DPW/WW Parks	Starting 2015, provide training and refresher every 2 years	May 19, 2015
2	Perform street sweeping	Street sweeping contracted to Jackson County Road Commission	Contract	Once annually (spring)	June 11,12 2018
3	Inspect and clean storm sewer catch basins/facilities Routine inspection by DPW employees; Catch basin cleaning contract		DPW Contractor	Inspections twice per month; Cleaned once every other year	April-October April 2018
4	Wash vehicles in areas not connected to storm sewer or surface water	(1) Wash where drains connect to sanitary, OR(2) Grassy areas not draining to surface water	DPW WW Fire, Police	On-going; Include in employee training session	Vehicles washed in grassy area of village park
5	Leaf and brush collection, composting option for residents	Collect residential yard debris, compost at village facility open	DPW	Once annually (fall); On-going compost site open to residents	October 1st-December 1st
6	Require proper fertilizer use to protect water quality	(1) No P-fertilizers(2) Proper rates(3) Not adjacent to water	Contractor	Annually	
7	Snow pile storage areas	Do not store snow piles adjacent to surface water or near storm drains located near snow piles	DPW	Annually	Snow stored at village park (not connected to river) on asphalt pad or grass (where no storm sewers present)

4.0 STORMWATER PERFORMANCE STANDARDS FOR NEW AND REDEVELOPED SITES

	Activity	Details	Schedule	Status Report 2018
1	Educate village council on the need for stormwater management at new and redeveloped sites	Get resolution added to Village Council agenda	April 2015	March 2015
2	Discuss stormwater review with Jackson County Health Department	Drain Office no longer performing review	March 2015	April 2, 2015
3	Stormwater ordinance adopted by village council effective for all new and redeveloped sites	Ordinance requiring all new and redeveloped sites to conform to County stormwater standards	Before May 2015	Ordinance #177 Passed April 28, 2015

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01-17-2019

Kalamazoo Water Reclamation Plant 1415 North Harrison Kalamazoo, MI 49007 Attn: Jim Cornell

RE: JBS Plainwell, Inc.

This letter is to convey our efforts on phosphorous reduction and our assistance toward non-point source reductions.

Attached is a summary of the 2018 phosphorus contributions. Our phosphorus reduction activities included daily monitoring of our phosphorus discharges and efforts in maintaining a monthly average of .7 mg/l or below from the wastewater treatment effluent. Our monthly average for the year was .75 mg/l, just above the .7 mg/l goal. The summer limit is .77 mg/L and our Summer Average was .74 mg/L.

Non-point source assistance activities included general housekeeping and policing of our parking lots. Promotion and/or Participation for events that took place on the Kalamazoo River were also supported in 2018, and will continue.

1 Ling Mayrand

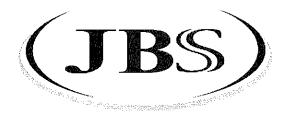
Sincerely,

Abraham Anderson & Craig Maynard

JBS Plainwell, Inc.

Environmental/Wastewater

JBS Plainwell, Inc. Monthly Discharge Averages NPDES Permit # Ml0050628						
	mg/L	MGD	mg/L:	lbs		
Date	INF T- Phos	Flow	EFF T-Phos	EFF T-Phos	Removal	
Jan-18	46	0.946	0.82	6.5	0.98	
Feb-18	53	0.951	0.80	6.3	0.98	
Mar-18	47	0.955	0.94	7.5	0.98	
Apr-18	47	0.946	0.82	6.5	0.98	
May-18	39	0.984	0.56	4.6	0.99	
Jun-18	35	1.039	0.78	6.8	0.98	
Jul-18	34	1.061	0.72	6.4	0.98	
Aug-18	36	1.055	0.79	7.0	0.98	
Sep-18	34	1.032	0.77	6.6	0.98	
Oct-18	30	0.928	0.51	3.9	0.98	
Nov-18	32	1.026	0.79	6.8	0.98	
Dec-18	46	0.888	0.74	5.5	0.98	
Averages	40	0.984	0.75	6.19	0.98	
Permit Limit			1.00			
Summer Limit			0.77			
Summer Average (April-Sept) 0.74						



01-17-2019

Kalamazoo Water Reclamation Plant 1415 North Harrison Kalamazoo, MI 49007 Attn: Jim Cornell

RE: JBS Plainwell, Inc.

This letter is to convey our efforts on phosphorous reduction and our assistance toward non-point source reductions.

Attached is a summary of the 2018 phosphorus contributions. Our phosphorus reduction activities included daily monitoring of our phosphorus discharges and efforts in maintaining a monthly average of .7 mg/l or below from the wastewater treatment effluent. Our monthly average for the year was .75 mg/l, just above the .7 mg/l goal. The summer limit is .77 mg/L and our Summer Average was .74 mg/L.

Non-point source assistance activities included general housekeeping and policing of our parking lots. Promotion and/or Participation for events that took place on the Kalamazoo River were also supported in 2018, and will continue.

Sincerely,

Abraham Anderson & Craig Maynard JBS Plainwell, Inc. Environmental/Wastewater



Department of Public Services

Harrison Street Facility
1415 North Harrison Street
Kalamazoo, Michigan 49007-2565
Ph. 269.337.8701
Fx. 269.337.8699

CITY OF KALAMAZOO 2018 TMDL STRATEGIES

I. Point Source Phosphorus Reduction Strategies:

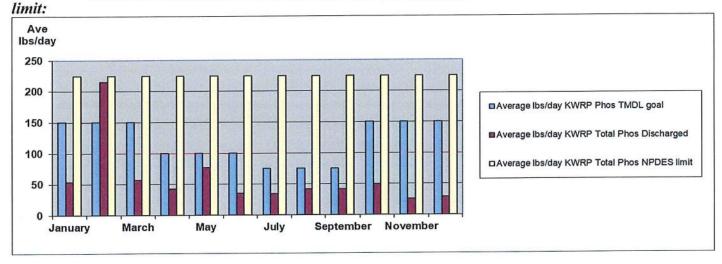
City of Kalamazoo staff attended all four of the two required TMDL joint point source/implementation committee meetings in 2018, paid our \$1700 fee for maintaining the Point Source Tracking and \$500 non-point source reduction activities fee. The City spent an additional \$2,184 in services and operating supplies for TMDL testing sites on the Kalamazoo.

City staff continued to expend operational hours and chemicals treating phosphorus in 2018 at its Water Reclamation Plant located at 1415 North Harrison Street (NPDES MI0023299). They utilized appropriate dosing points for the 7,939 gallons of ferric chloride (\$10,796) used to reduce phosphorus during the TMDL season. The City has ongoing success operating the Biological Nutrient Removal (BNR) system which is evident in the reduced volume of phosphorus discharged into the Kalamazoo River by the KWRP in 2018.

Staff continued to utilize the on-line phosphorus analyzers in primary, mixed liquor (post aeration), and tertiary. Additionally staff utilized ammonia analyzers in the mixed liquor (post aeration) and tertiary effluent as well as BOD analyzers at the secondary influent and tertiary effluent to monitor nutrient balance and nitrification. A tertiary effluent nitrate analyzer is also utilized to monitor denitrification from the BNR system. The use of these analyzers helps to maximize treatment throughout the plant. Our industrial facilities continued the practice of calling prior to discharging their phosphorus streams and continued to spread their spent phosphoric batch discharges where feasible over extended periods when the extended period did not affect their production schedules. The practice of calling ahead of discharging and discharging over an extended period enabled City of Kalamazoo operations staff to provide better removal by maintaining an appropriate nutrient balance and determine appropriate chemical dosing schemes.

We met our April- September TMDL goal in six of the TMDL months in 2018. The following graphs highlight our average daily and total monthly phosphorus discharges, our goals, our permit limit and our influent loading:

2018 City of Kalamazoo daily average of pounds of total phosphorus discharged as reported to the https://miwaters.deg.state.mi.us/miwaters/#/external/home website, our goals and our permit



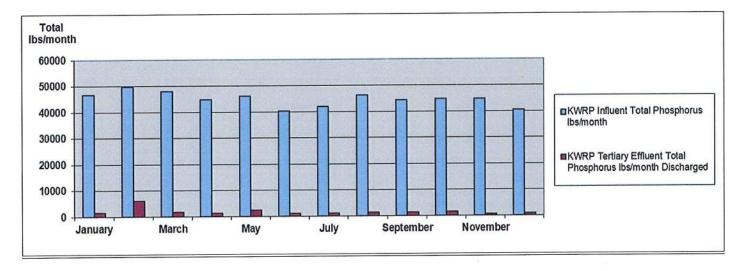
April-	Jun	e 100	lb/day goal
April	43	1bs	
May	77	1bs	
June	35	lbs	

July-September 75 lb/day goalJuly35 lbsAugust42 lbsSeptember42 lbs

Permit Limit per day

Jan- Dec 225 lbs

2018 City of Kalamazoo monthly pounds of total phosphorus treated and discharged:



Primary Influent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total Pounds-	46668	49740	48024	44783	45974	40160	41916	46259	44247	44753	44802	40471
Tertiary Effluent	las	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Conc mg/l-	Jan 0.23	0.49	0.20	0.18	0.28	0.14	0.15	0.18	0.18	0.22	0.12	0.13
Total Pounds-	1651	6021	1762	1284	2387	1049	1081	1293	1249	1534	780	891

II. Non-Point Source Phosphorus Reduction Strategies:

The City of Kalamazoo staff attended four TMDL joint point source/implementation committee meetings; maintained board position on the Kalamazoo River Watershed council and partnered with the City of Allegan WWTP to conduct in-stream phosphorus sampling and analysis of the Kalamazoo River; and provided \$2,184 in-kind analytical services and operating supplies for the Kalamazoo River Sampling conducted within Kalamazoo County.

The KWRP participated in a Krazy for the Kazoo events in 2018; the KWRP performed a cleanup along the Schippers Lane County Drain that runs through the City of Kalamazoo Schipper's site; the City did not solicit community volunteers for this event. This County Drain flows directly into the Kalamazoo River.

The City has an approved citywide MS4 stormwater permit and has spent many hours surveying the stormwater system for illicit discharges/connections and made corrections where applicable. The City requires stormwater treatment in new and redeveloped properties, as needed, through the site plan review process. City staff reviews site plans to ensure proper stormwater controls are implemented in the plans. Staff also encourages, through the site plan review, the installation of natural and native plantings and stormwater infiltration areas where appropriate. City staff cleaned/maintained various portions of the City's stormwater system, conducted routine street sweeping required installation and maintenance of stormwater pre-treatment systems and staff implemented good housekeeping techniques where possible to minimize impact on water quality. The City of Kalamazoo has both Stormwater and Wellhead Protection Ordinances. The City maintains a green roof on City Hall.

The City conducted several public education outreach sessions in 2018 where stormwater and wellhead protection. Staff maintained active media campaigns using theater ads, radio ads, and bus placards to educate the public on wellhead protection, groundwater, and stormwater issues. The Wastewater plant conducted several plant tours in 2018 for WMU Hydrogeology Class, Group of Engineers, General Public during Public Services Week, City of Kalamazoo Employees, Elementary School Students, and Big Brothers & Big Sisters. In 2018 approximately 100 people toured the wastewater treatment plant. They covered plant operations, the new secondary BNR process to help meet TMDL limits, TMDL issues, and stormwater concerns and efforts.

The Kalamazoo Water Reclamation Plant maintained the valves installed on its facility stormwater outfalls which are closed during non-storm events to enable our facility to contain, remove and cleanse the stormwater system of any undesirable material so that it does not enter the river prior to treatment within our facility. The KWRP rerouted one of its remaining three stormwater outfalls to the north limit sanitary interceptor; the KWRP only has two remaining stormwater outfalls. Cleaning of basins and basin repair is occurring as needed. Street sweeping of streets within the plant is performed as needed. The Kalamazoo Water plant also conducted its annual stormwater system education sessions required under our NPDES permit and quarterly on-site stormwater system comprehensive inspections in 2018. The City has two active rain garden areas and a bioswale with native plants at its Harrison Street Facility (KWRP).

In 2018, City promoted the State lawn fertilizer ban in the View from the Curb pamphlet which is delivered to each household within the City and also available on the City website. Staff continued to optimize corrosion control chemicals for its potable water system.



117 S. Main St. P.O. Box 367 Olivet, MI 49076 Phone (269) 749-4961 Fax (269) 749-2034

2018 TMDL ANNUAL REPORT

On September 22, 2018, the City of Olivet, City of Charlotte and the Village of Bellevue hosted the 5th annual Kanoe the Kazoo Event in the City of Olivet. This program provided educational materials regarding the need to reduce phosphorus levels in our lakes, rivers and streams as well as providing material regarding point source and a non-point source contaminates. A picnic lunch was provided at the end of the event for all the participants and volunteers. This event is well received by area residents and continues to gain interest from year to year.

During the last year, the City of Olivet completed the annual street sweeping program. We currently have a contract with Superior Sweeping for once a year, however in 2018 we swept a total of two times and plan on continuing with this frequency. We evaluate, clean and repair our storm catch grates on a regular basis and we held our annual curbside leaf pickup from October 8th to November 16th, 2018 however with the late fall season we extended the pickup into the month of December. This annual curbside leaf pickup generates an enormous amount of leaves for our compost site. Local residents are able to use the composted material on their gardens and other various locations around the city.

The City of Olivet collaborates with Bellevue Village, Bellevue and Walton Townships for a weekly recycling program. This program continues to receive more users each year. The site is located in Walton Township and receives paper products, plastics, glass and metal/aluminum. The City of Olivet also accepts all types of used batteries and florescent light bulbs. Residence can drop these items off at city hall Monday thru Friday during business hours.

The City of Olivet has established many articles on its website (<u>cityofolivet.org</u>) regarding water awareness programs such as Wellhead Protection; Abandoned Well Management; Water Conservation Programs; Pharmaceutical Disposal and Storm Drain Protection along with other information.

The City of Olivet continues to work with the Michigan Rural Water Association and the Michigan Department of Environmental Quality to reduce the levels of phosphorus in our sewer lagoon system.

Olivet's storm water plan is current and we continues to work with the Eaton County Drain Commission and Construction Code Department on post construction activities that take place in the city.

"This institution is an equal opportunity provider and employer."

The City of Olivet developed a new green space in the downtown core in 2015 and it continues to gain popularity from year to year.

The City of Olivet attended four TMDL point source meetings in 2018 and submitted its sewer lagoon phosphorus loading data each month to TMDL point source tracking as required.

From January 2012 to February 2014 the City of Olivet has spent more than \$45,330 adding Hydrozyne to the sewer lagoons to help reduce the levels of phosphorus. This was discontinued in February 2014, we also had two of the sewer cells cleaned and sludge removed. We also treated the lagoons for duck weed in early summer 2016 and will continue to monitor and evaluate the ponds for future issues.

In 2012 the City of Olivet adopted an Ordinance to ban the use of lawn fertilize containing phosphorus. Each year we remind our residents about the ban of phosphorus lawn fertilizers in our April newsletter.

Respectfully Submitted,

Jerry Staggs Director of Public Works 269 339-8219 117 S. Main St. Olivet MI 49076

OTSEGO WWTP 2018 PS TMDL PHOSPHOROUS LOADING

Facility Name- Otsego WWTP

	April	May	June	July	August	September
1998 lbs. Baseline	45	45	45	45	45	45
Goal lbs.	45	45	45	33	33	33
Actual lbs	39	56	30	31	24	42
% Reduction From 1998	13	None	33	31	47	7

Total Pounds April thru September 2017 = 222
Total Pounds Allowance for 1998 = 270 270-222=48 48/270*100%= 18%
Reduction for July thru Sept period is 135-97=38 38 /135*100%= 28%

Luke Keyzer Supt. Otsego WWTP

Parker Hannifin - Fluid System Connectos Division, 300 Parker Drive, Otsego MI 49078

Cooperative Agreement Meeting Attendance:

Attended all ascheduled meetings for 2018: Listed below

10/18/2018

7/19/2018

4/19/2018

1/18/2018

Summary of Monthly Phosphorus Discharge Data for CY 2018 for Air Stripper:

pling	ifluent Sampling for Phosphorus <u>MG/L</u>	Air Strip	y Flow for month per Discharge <u>MGD</u>
tripper			
ration		•	
onger			
red per			
DEQ			
roval	N/A		N/A
	luent El pling tripper ration onger red per DEQ proval	npling Phosphorus Nate MG/L tripper ration onger red per DEQ	npling Phosphorus Air Stripper tripper ration onger red per DEQ

Housekeeping Activities for SWPPP

Perform monthly facilities SWPPP inspections

=-Includes inspection of all facility grounds and outfalls

Non-Point Source Participation Events

Encourage employee participation in Kanoe the Kazoo canoeing events on Kalamazoo River as convenient. Encourage employees to participate in the "Krazy for the Kazoo" river cleanup on Oct in the City of Otsego.

Public Education about phoshorus in Kalamazoo water shed

Conducted phophorous awareness education during plant meetings on May 31st 2018 presented to roughly 300 employees

Communicated the schedule and details of the Kanoe the Kazoo canoeing events.

Comunicated the "Krazy for the Kazoo" river cleanups dates and locations.

Discussed the use of rain barrels for water conservation and to limit spread of phophorous contamination.

Explained the tributaries and streams leading into the Kalamazoo water shed.

Village of Springport in association with TMDL

Storm Sewer

- Monitor storm sewer outlet (1) weekly
 - Minimal flow when weather is dry
- Three engineered weirs in center of flow line approx. 150` apart for erosion control
- Erosion mats at out flow for erosion control
- Swept all streets 6-8-18 and 8-4-18
- Leaf and Brush pick up every Monday (weather permitting)
- Replaced and add 400' of new Storm Sewer 8-15-18
 - With restoration found 3 existing catch basins which were all cleaned

Sanitary Sewer

- Monitor lagoons daily
 - Mowing, weed trimming, and spraying(Rodeo)
 - Document weather conditions
 - Document lagoon levels
 - Replaced aerators at lagoons (holding ponds & hot ponds)
 - Appropriate sampling during discharge
 - ♦ Discharge twice a year

Public Notice

- TMDL trifolds available at village office
- Advise not to use phosphorus rich fertilizers in our consumer confidence reports
- In the process of designing new website for the village which will have TMDL information present in it





January 23, 2019

Kalamazoo Water Reclamation Plant 1415 North Harrison Kalamazoo, Michigan 49007 Attn: Jim Cornell

To: Kalamazoo River Watershed Phosphorous TMDL Implementation Committee

From: Frank Knowles - Otsego Paper, Inc.

Subject: Annual Report of TMDL Activities for 2018 for Otsego Paper, Inc.

Activities:

January 18, 2018:

Attended the joint meeting of TMDL Point Source and

Implementation Committee.

April 19, 2018:

Attended the joint meeting of TMDL Point Source and

Implementation Committee.

July 19, 2018:

Attended the joint meeting of TMDL Point Source and

Implementation Committee.

October 18, 2018:

Attended the joint meeting of TMDL Point Source and

Implementation Committee.

Phosphorous loading data was reported each month to the MiWaters website as required.

Annual fees were paid as required.

"Kanoe the Kazoo" was advertised to mill employees. These events are used to educate the public regarding uses of the Kalamazoo River. The flyer was shown on the lunchroom monitor with updates through the summer as to event times and locations. The flyer was also posted in the lunchroom.





Below is 2018 Phosphorous data reported for the Otsego Paper, Inc.

Phosphorous Loading Report for 2018

	003 Outfall		001 Outfall	
Month	Concentration mg/l	Total Pounds	Concentration mg/l	Total Pounds
Apr	0.92	466.00	0.00	0.00
May	0.59	342.02	0.00	0.00
June	0.52	288.84	0.00	0.00
July	0.73	416.71	0.00	0.00
Aug	0.58	317.57	0.00	0.00
Sept	0.64	344.84	0.00	0.00

Sincerely,

Frank Knowles

Environmental Compliance Supervisor

Otsego Paper, Inc.

Email: fknowles@usg.com Phone: 269-384-6351

Filolic. 209-364-0331

cc: Henry Krell

Eric Bock

Attachment 5

Point Source Lake Allegan/Kalamazoo River Raw Data Summary 2018

Kalamazoo River 2018 Phosphorus Data Cities of Allegan & Kalamazoo

	35th Street	Comstock	Consumers	s Power Dr	Pate	rson	Мо	sel	M-8	9 South Bri	dge	Alle	gan Dam O	utfall
	Total	Sol	Total	Sol	Total	Sol	Total	Sol	Total	Sol	TSS	Total	Sol	TSS
Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
04/10/18	0.081	0.088	1.29	0.125	0.067	0.057	0.097	0.057						
04/11/18									0.037	0.009	13	0.030	0.013	9
04/24/18	0.09	0.056	0.04	0.055	0.077	0.053	0.058	0.053						
04/25/18									0.073	0.012	16	0.043	0.012	10
05/08/18	0.115	0.079	0.087	0.09	0.08	0.057	0.095	0.076						
05/09/18									0.062	0.005	14	0.031	0.007	20
05/22/18	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03						
05/23/18									0.104	0.031	25	0.099	0.025	21
06/05/18	0.079	0.057	0.072	0.044	0.072	0.046	0.073	0.047	0.135	0.044	42	0.086	0.024	18
06/19/18	0.085	0.036	<0.03	0.036	0.117	0.069	0.096	0.045						
06/20/18									0.106	0.022	18	0.076	0.011	17
07/03/18	0.054	0.056	0.046	0.03	0.082	0.067	0.059	<0.03	0.154	0.021	21	0.082	0.017	15
07/17/18	0.049	0.086	0.073	0.073	0.08	0.098	0.05	0.066	0.071	0.014	13	0.049	0.012	11
07/31/18	0.077	0.058	0.097	<0.03	0.095	0.061	0.099	0.071	0.05	0.011	15	0.042	0.011	16
08/14/18	0.075	0.105	0.062	0.083	0.351	0.069	0.123	0.037						
08/15/18									0.125	0.093	89	0.080	0.031	6
08/28/18	0.035	0.06	0.041	0.032	0.145	0.061	0.108	0.079						
08/29/18									0.168	0.021	71	0.030	0.006	13
09/11/18	0.1	0.086	0.11	0.093	0.31	0.1	0.097	0.4	0.047	0.012	8	0.066	0.013	13
09/25/18	0.266	0.156	0.165	0.21	0.172	0.217	0.237	0.206	0.049	0.03	8	0.066	0.014	12

2018 Averages for each sample location														
Average mg/l	0.09	0.08	0.19	0.08	0.14	0.08	0.10	0.10	0.09	0.03	27	0.060	0.015	14
Average µg/l	92	77	189	79	137	80	99	103	91	25	27154	60	15	13923

Attachment 6

Non-Point Source Activities & Public Education Events 2018

Kanoe the Kazoo & Krazy for the Kazoo



KANOE KAZOO

Mon., June 25, 5:30 pm

Wed., June 27, 5:30 pm

Sat., July 7, 10:00 am

Sat., July 28, 10:00 am

Sat., Aug. 4, 8:30 am

Mon., Aug. 6, 5:30 pm

Sat., Sept. 15, 8:30 am

Sat., Sept. 22, 9:00 am

Kalamazoo River - Plainwell to Otsego

Gull Lake

Kalamazoo River - Trowbridge to Allegan

Lower Crooked Lake

Kalamazoo River - Marshall to Historic Bridge Park

Kalamazoo River - Comstock to Kalamazoo

Kalamazoo River - Comstock to Kalamazoo

Indian Creek - Olivet



Reservation Required

www.KalamazooRiver.org—for complete reservation information

An annual event since 2003, Kanoe the Kazoo has introduced thousands of area citizens to the beauty and recreational opportunities provided by the Kalamazoo River and its tributary streams and lakes. Participating organizations are offering floats on various stretches of the Kalamazoo River, its tributaries and lakes within the watershed.

Participants need to:

Furnish their own canoe or kayak (check website for available rentals), paddles, paddle partner, and life vests (required).

Other possible items to bring:

- Camera
- Binoculars
- Cell phone
- · Water bottle
- · Sunscreen and hat
- · Rain gear
- Bug repellent

Please no alcoholic beverages

Reservations Required

www.KalamazooRiver.org



Paddle Safety

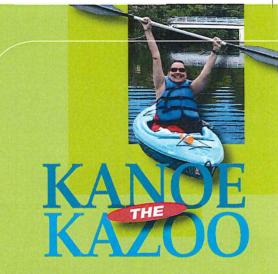
We want everyone to enjoy the Kalamazoo River and our inland water resources in a safe and sustainable way. It is important to remember you are in charge of your own safety when using the river. Always wear a personal floatation device. Be sure to keep litter out of the river to protect wildlife habitat and keep the river beautiful for all to enjoy.

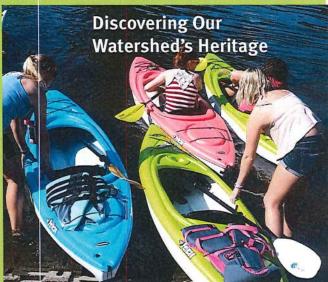
In terms of public health and safety, previous studies and recent monitoring have shown that there are no health concerns for casual body contact with the Kalamazoo River or its tributaries, as would be experienced in paddling and swimming.

Special Thanks to our Supporters

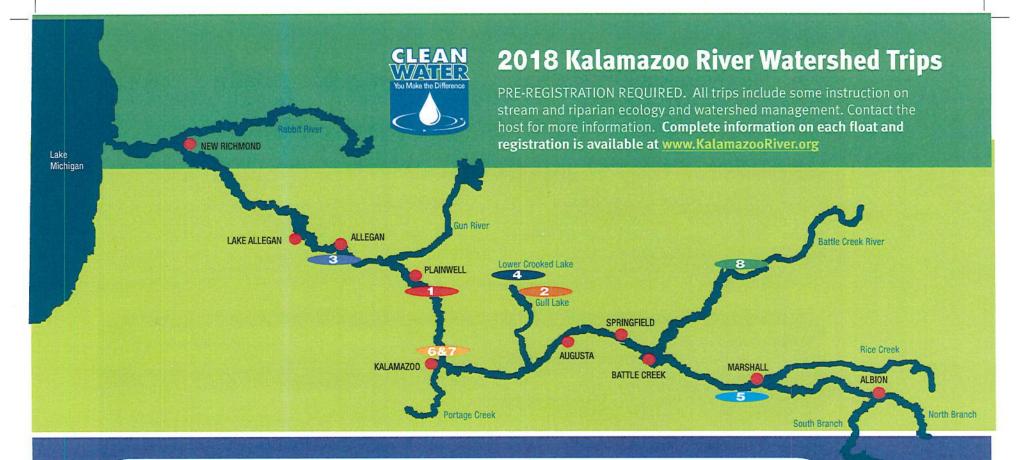
Thank you to the many cities, industries, and conservation partners that make up the Lake Allegan/Kalamazoo River Phosphorus Total Maximum Daily Load (TMDL) Committee, who collectively founded and continue to sponsor this annual event.

- A.M. Todd Co.
- City of Albion
- · City of Allegan
- · City of Battle Creek
- Village of Bellevue
- Brookfield Township
- City of Charlotte
- Clarence Township
- · Village of Concord
- Gun Lake Area
 Sewer Authority
- Village of Homer
- JBS Plainwell
- · City of Kalamazoo
- · City of Marshall
- · City of Olivet
- · City of Otsego
- AMEC Foster Wheeler
- Parker Hannifin
- Perrigo Co.
- City of Plainwell
- Village of Springport
- · West Rock California, Inc.





2018 River, Lake, and Stream Trips. June through September



Join us as we celebrate the Kalamazoo River Watershed. We believe there's no better way to enjoy this scenic and valuable regional resource than from a canoe or kayak on the river. <u>Learn more at KalamazooRiver.org</u>

- Monday, June 25 5:30 PM Kalamazoo River Plainwell-Otsego City of Plainwell & Plainwell Kayak Co. Lois at (269) 365-2926 PlainwellKayakCompany@gmail.com
- Wednesday, June 27 5:30 PM Gull Lake Four Township Water Resources Council Ken at (269) 330-1097 ftwrc@aol.com
- 3 Saturday, July 7 10:00 AM Kalamazoo River Trowbridge-Allegan Allegan Conservation District & Great Lakes Adventures Club Tori or Kenneth (269) 673-6940 or (269) 330-1040 tori.harris@macd.org
- 4 Saturday, July 28 10:00 AM Lower Crooked Lake Kellogg Biological Station Misty at (269) 671-2402 klotzmis@msu.edu

- 5 Saturday, August 4 8:30 AM Kalamazoo River Marshall-Historic Bridge Park City of Battle Creek / Clean Water Partners & City of Marshall / Marshall Area Conservation Com. Elizabeth at (269) 966-3355 egpaul@battlecreekmi.gov
- 6 Monday, August 6 5:30 PM Kalamazoo River Comstock-Kalamazoo Kalamazoo River Watershed Council & Arcadia Ales Jamie at (269) 447-1580 krwc@kalamazooriver.org
- 7 Saturday, September 15 8:30 AM Kalamazoo River Comstock-Kalamazoo City of Kalamazoo Public Works Shannan at (269) 377-4753 deaters@kalamazoocity.org
- S Saturday, September 22 9:00 AM Indian Creek-Olivet Cities of Charlotte, Olivet, and Bellevue Matt at (517) 231-2324 mgriffith@charlottemi.org



All paddle plans may be modified due to weather, water, or group dynamics. Contact the host organization and check website for any changes.

Brought to you by the **Phosphorus TMDL Committee**.

KRAZY FOR THE KAZOO

Krazy for the Kazoo, a river clean up & conservation day event, in Marshall MI is hosted by the Marshall Area Conservation Committee. Volunteers of all ages are encouraged to participate.

Let us Know you are attending:
https://www.facebook.com/events/120337422097797/
For more information:
Home (https://kalamazooriver.org/)

CLEANUP SIGN-UP

Sign up here to volunteer with your local cleanup. Bringing friends and family with you? Please register each volunteer separately!

VOLUNTEER

First Name	 	
First		
Last Name		•
Last		
Email	 1,4 · · · · · · · · · · · · · · · · · · ·	

Phone

Krazy for the Kazoo

Kalamazoo River

10/06/2018

09:00 am

CLEAN-UP INFORMATION

MARSHALL AREA CONSERVATION COMMITTEE

River: Kalamazoo River

Contact email: vosburgc@gmail.com (mailto:vosburgc@gmail.com)

Contact Phone: (269) 558-0328 (tel:(269) 558-0328)

Event Date & Time: 10/06/2018, 09:00 am



Pailey Park, 1392 Capital Ave NE, Battle Creek, MI 49017, USA

KALAMAZOO RIVER

O Be River Wise

OUR WATERSHED

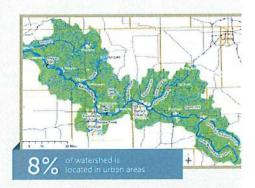
of our water comes from

2,020 400,000 square miles in the



of watershed is farmed

counties with a footprint in our watershed



Need to reduce phosphorus by 50%

Only 8% of watershed is urbanized, yet it accounts for 50% of all the phosphorus that gets into the river.



WHAT IS PHOSPHORUS?

Phosphorus is the nutrient found in manure, leaves, soil, and lake sediments that fertilizes plant and algae growth in rivers and lakes.





Algae and other aquatic plants grow when stormwater runs into rivers during storms. Fertilizers contain phosphorus and nitrogen. Roadway runoff also contains heavy metals, salt, and harmful sediments. What gets to the street, gets to the creek!

THE SOLUTION



Use rain gardens and green landscape to soak rain water into ground.

Use rain barrels to slow stormwater runoff.





Keep driveways clear of grass clippings and other debris.



For more solutions visit kalamazooriver.org Paid for by the Lake Allegan/Idiamazoo River TMDL Committee, Special thanks to the cities of Albion, Allegan, Batte Creek, Bellevue, Brookheld Towndrip, Chaldrist, Clarence Township, Cencerd, Homer, Gir Lake Sewer Authority, Kalamazoo, Marriald, Oliver, Orsego, Parms, Springport and industry partners AM Todd Co., 385 Piamwell, Otego Pacer, Pirker Harni Perigo Co., and WestBook California Inc.



61st GRAMMY Awards on CBS





nt/the-latest-chris-cornell-wins-posthumous-grammy)

Gaga, Jackman win GRAMMY VOTE: Record of the Year

ADVERTISEMENT

Krazy for the Kazoo cleans up the Kalamazoo River for 18th straight year

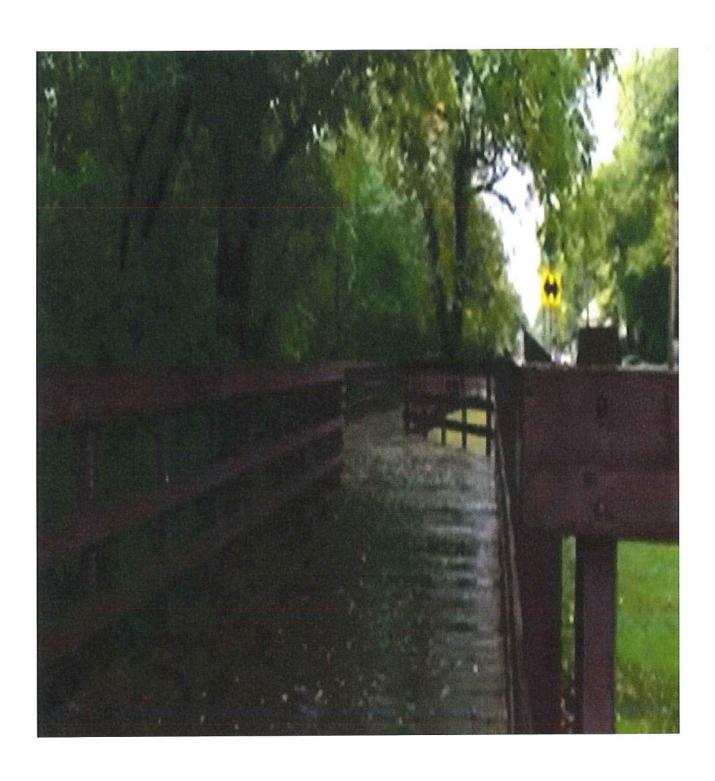
by Jacob Berent | Newschannel 3 Saturday, October 6th 2018

FACEBOOK

TWITTER

MAIL

≡ TRENDING



f FACEBOOK





TRENDING

AA f

BATTLE CREEK, Mich. — People in Battle Creek care about their parks and trails. So much so, they take a day every year to clean up those paths and parks in order to make them more beautiful for everyone.

This is the 18th year of the clean up, and Lizzy Paul, Battle Creek's environmental program coordinator, says when they were choosing sites for this year's clean up, they had to cross some spots off the list.

"The sites that we have focused on in the past are cleaned up now. People are using those parks and trails," Paul said. "And you can see it year to year when you're picking out the sites."

f

FACEBOOK TWITTER MAIL TRENDING

ADVERTISING



Over 100 volunteers clad in rain boots and ponchos, shovels in their hands, took to sites along the Kalamazoo River and picked up trash and debris. Jewel McMasters, a junior at Athens High School, said this is her first "Krazy for Kazoo" clean up this year.

"We're going around on the side of the river, sometimes in the river, to pick up trash," McMasters said. "Really disgusting stuff, I saw a lemonade bottle... ice cream wrappers."

A somber tone began the day's ceremonies, as they gave the annual Clean Water Award posthumously to Tiffany Welsh, who helped organize the Krazy for Kazoo event for more than a decade before losing a battle with non-Hodgkin lymphoma last month.







