Rule 13 - MS4 ANNUAL REPORT

State Form 51278 (R6 / 7-12)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NOTE:

- Annual reports must be submitted to the Indiana Department of Environmental Management. **Failure to submit the annual report is considered noncompliance with your permit.**
- For the **first five** (5)-year permit term, this completed form must be submitted by 1 year from the SWQMP – Part C submittal date and, thereafter, 1 year from the previous report (i.e., in years two (2) through five (5) of permit coverage).
- In the **second and subsequent** five (5)-year permit terms, this completed form must be submitted in years two (2) and four (4) of permit coverage.
- **Please type or print in ink.**
- Please answer all questions thoroughly and return the form by the due date.
- Return this form and any required attachments to the IDEM Storm Water Program, MS4 Coordinator at the address listed in the box on the upper-right.

For questions regarding this form, contact:

IDEM Office of Water Quality , Storm Water Program
MS4 Coordinator
100 North Senate Avenue, Room 1255
MC 65-42
Indianapolis, IN 46204-2251

Telephone: (317) 234-1601 or
(800) 451-6027, ext. 41601 (within Indiana)

Web Access: http://www.IN.gov/idem/4900

Five Year Permit Term	Reporting Year
☐ 1st Permit Term ☒ Second and subsequent five (5) Year Permit Terms	**Permit Year** 2019 and 2020 ☐ 1 ☒ 2 ☒ 3 ☐ 4 ☐ 5 MS4s in their first permit term must submit reports annually. MS4s that are in subsequent permit terms must submit in years 2 and 4 of the permit term.

PART A: GENERAL INFORMATION – MS4 OPERATOR

1. Permit Number:	**INR 0 4 0 073**	**Type of MS4:** ☒ City ☐ Town ☐ County ☐ Non-traditional
2. MS4 Entity:	City of Valparaiso *(Name of permit holder)*	
3. MS4 Operator:	Matt Murphy	
4. Mailing Address:	166 W Linconlway Valparaiso, IN ZIP: 46383 County: Porter	
5. Email Address:	mmurphy@valpo.us	

PART B: GENERAL INFORMATION – MS4 COORDINATOR

6. MS4 Coordinator (*please print*):	Mingyan Zhou
7. Person's Title:	Deputy Engineer/MS4 Coordinator
8. Mailing Address:	166 W Linconlway Valparaiso, IN ZIP: 46383
9. Telephone Number:	(219) 462-1161
10. E-mail Address:	mzhou@valpo.us

PART C: GENERAL INFORMATION – REPORT PREPARER

11. Name: (*Provide this information if someone other than MS4 Operator or Coordinator completed this report.*)	
12. Affiliation with the MS4:	
13. Mailing Address:	, IN ZIP:
14. Telephone Number:	Extension:
15. E-mail Address:	

PART D: PROGRAM MANAGEMENT
327 IAC 15-13-18

16. Provide a summary of the following program management activities performed during the reporting period:

a) If this is a co-permit, list all permittees and operators responsible for permit implementation for each entity.

* City of Valparaiso, Matt Murphy, Mayor
* Valparaiso University, Jose D. Padilla, President

b) Identify changes to the MS4 area boundaries, including areas added to or lost to the MS4 area via annexation or other similar means. Provide a current map (8.5" X 11" or 8.5" X 14")

A map of City of Valparaiso Limits as of Dec. 31, 2020 is provided in attachments. The City annexed several parcels in two annexations since the last report on Nov. 2017. The areas of these two annexations were approximately 31 acres.

c) Identify follow-up or additional water quality characterizations completed during the reporting period if applicable.

The City of Valparaiso and Co-permittee Valparaiso University have been monitoring the quality of our receiving waters in Salt Creek Watershed at multiple locations since 2004. The new data collected during this reporting period is provided in attachments. For the biological monitoring conducted by Valparaiso University, due to COVID19 restrictions, only 2 sites were sampled in 2020.

d) Provide updated receiving water information completed during the reporting period if applicable.

The City of Valparaiso is continuing to define its receiving waters as those shown as a solid blue line on the United States Geological Survey 7.5-minute quadrangle map. No new receiving water was added during the reporting period. The current receiving waters include Salt Creek, Beauty Creek, Sagers Run, Pepper Creek, Flint Lake Garden Terrace Drain, and Cain Ditch.

e) Identify funding sources (utility fees, grants, enforcement fines etc) utilized for MS4 program implementation during this reporting period.

Stormwater fees collected from local residential and nonresidential properties are the major funding sources for the City of Valparaiso for MS4 program implementation during this reporting period.

f) Provide a list of new active industrial sites identified during this reporting period.

No new active industrial sites were identified during this reporting period.

g) Provide a list of facilities owned and operated by the MS4 that require Rule 6 (industrial storm water) permits.

Rule 6 permit is not required for any facilities owned and operated by the City of Valparaiso.

h) Provide a summary of complaints received and follow-up investigation results related to storm water quality issues during this reporting period.

During the reporting period, some complaints associated with erosion and sediment control at construction sites were received. The follow-up investigation and actions for all these complaints were checking the sites, requiring builders/contractors to address issues, and making sure the issues were addressed.

In addition to complaints about construction sites, seven other complaints related to storm water quality issues were received during the reporting period. The complaints and follow-up investigation and actions are listed below:

1. Complaint Date: 3/6/2019. Issue: Oil or grease drained out from the garage of a house and drained down to the gutter along the street. Action: Sent a letter and the "Home Hot Spots for Water Quality" brochure to the homeowner and required to have the issue fixed and stains cleaned. Checked and made sure it was addressed.

2. Complaint Date: 5/1/2019. Issue: Sediment discharged to downstream from some eroded area at an elementary school after heavy rains. Action: Talked to school staff and the school fixed the eroded area.

3. Complaint Date: 7/9/2019. Issue: A car parked in front a house leaked oil in street. Action: Sent a letter to the homeowner and required the homeowner to have the car fixed. Checked afterwards and did not see more stains in street.

4. Complaint Date: 3/22/2020. Issue: Grey water discharged out of a house onto driveway and drained to street. The issue started after someone moved into the house which was vacant for a long time. Action: Contacted the owner and the issue was fixed in several days.

5. Complaint Date: 9/8/2020. Issue: Sediment discharged to downstream from a drain. Action: Checked the entire system upstream of the drain but didn't see any locations where sediment could go into the system. Called the resident and he said he assumed sediment would go into the drain due to the recent rain, and he just wanted someone to check.

6. Complaint Date: 10/30/2020. Issue: Fish kill in private ponds at an apartment complex after the drives and parking lots in the area were resurfaced and rained right after. Action: Talked to property owner and some County & State agencies and they were aware the situation. Dead fish were cleaned up and property owner was educated on not to do the type of projects right before rain events.

7. Complaint Date: 12/21/2020. Issue: Some trash in the ponds at a shopping center. Action: Talked to the store manager and the ponds were cleaned up.

i) Other:

PART E: PUBLIC EDUCATION AND OUTREACH - MINIMUM CONTROL MEASURE

17. Identify the best management practices (BMPs) for public education and outreach included in your Storm Water Quality Management Plan (SWQMP) Part C and then respond to the following:

a) Identify progress made towards development and implementation of each BMP for this minimum control measure (MCM) including timetables and measurable goals during this reporting period.

The City of Valparaiso has conducted many Public Education and Outreach activities towards different types of constituent during this reporting period. Please refer to the Programmatic Indicators Report for the details of these activities.

b) Describe implementation problems encountered and changes made due to ineffectiveness or infeasibility during this reporting period.

Insufficient personnel of the program has been the main obstacle for this MCM. Partnering or contracting with other entities was the approach we used to solve the problem.

For this reporting period, COVID 19 also played a significant limiting role in personal interactions and therefore implementing this MCM.

c) Describe program BMPs that went beyond those identified in the SWQMP.

Educated septic system owners within the MS4 jurisdiction on septic system maintenance during this reporting period.

Educated owners of some new homes with bare yards on erosion and sediment control.

Educated homeowners within the MS4 jurisdiction on stormwater pollutants management around the home.

Educated dog owners on the importance of picking up the dog waste. Dog waste bags are provided to dog owners for free. During this reporting period, a total of 19,440 bags were purchased.

During the reporting period, the MS4 program was presented to 3 classes at Valparaiso University by MS4 Coordinator.

During the reporting period, purchased 500 MS4 Stormwater educational pens and provided them at City Hall for public to pick up for free. The pens are also distributed out at several local events.

The City of Valparaiso's Community Engagement Department created a Neighborhood Toolkit and Go Green and stormwater quality management was included in the toolkit. The toolkit has been promoted to more than 20 neighborhoods and is available to all residents in the City.

Also the MS4 partnership within the region hosted workshops for contractors annually.

d) Identify storm water BMPs installed or initiated for this MCM during this reporting period.

Please refer to Programmatic Indicators Report for the stormwater activities and BMPs.

e) Describe program implementation partnerships and explain successes and barriers during this reporting period.

The City of Valparaiso partnered with Recycling and Waste Reduction District of Porter County to provide public education and outreach programs during this reporting period.

The City of Valparaiso is also a member of the Northwest Indiana Stormwater Advisory Group (NISWAG), which met bimonthly during reporting period.

In addition, the City of Valparaiso is co-permitted with Valparaiso University to implement the Stormwater Quality Management Plan.

Successes: the partnerships made it possible to reach a much larger number of citizens and more types of constituent, the partnerships allow information to be distributed out consistently within the region, and the partnerships save staff time and money for individual MS4s.

Barriers: no barriers in partnerships were experienced during this reporting period.

f) Other:
None

PART F: PUBLIC PARTICIPATION AND INVOLVEMENT - MINIMUM CONTROL MEASURE

18. Identify the best management practices for public participation and involvement included in your SWQMP Part C and then respond to the following:

a) Identify progress made towards development and implementation of each BMP for this MCM including timetables and measurable goals during this reporting period.

During this reporting period, the public participation and involvement at stormwater management included public attendance at council and board meetings, public participation at tree planting events, on site stormwater management using rain barrels, pet waste management, yard waste management, E-waste and HHW collection events, and Report-A-Polluter program. Please refer to the Programmatic Indicators Report for the details of these activities.

b) Describe implementation problems encountered and changes made due to ineffectiveness or infeasibility during this reporting period.

Insufficient personnel of our MS4 Program has been the main obstacle for this MCM. Partnering with other entities is our approach to solve the problem.

For this reporting period, COVID 19 also played a significant limiting role in personal interactions and therefore implementing this MCM.

c) Describe program BMPs that went beyond those identified in the SWQMP.

Rain barrel program: Continued the rain barrel program. Rain barrels were provided to city residents and businesses at a reduced price for them to manage stormwater onsite. For this reporting period, 31 rain barrels were distributed out in 2019 and 18 in 2020.

Dog Waste Management Campaign: Educated dog owners on the importance of picking up the dog waste. Dog waste bags are provided to dog owners for free. During this reporting period, a total of 19,440 bags were purchased.

d) Identify storm water BMPs installed or initiated for this MCM during this reporting period.

No new BMPs were initiated during this reporting period. Refer to Programmatic Indicators Report for the exsiting and ongoing stormwater activities and BMPs.

e) Describe program implementation partnerships and explain successes and barriers during this reporting period.

The City of Valparaiso has formed a partnership with the Recycling and Waste Reduction District of Porter County to provide programs to city residents, such as E-Waste collection, HHW collection events, yard waste management and Rain Barrel Decoration Contest for K-12 schools. The partnership has been very successful and no barriers were experienced during this reporting period regarding this partnership.

f) Other:

PART G: ILLICIT DISCHARGE DETECTION AND ELIMINATION - MINIMUM CONTROL MEASURE

19. Identify the best management practices for illicit discharge detection and elimination (IDDE) included in your SWQMP Part C and then respond to the following:

a) Identify progress made towards development and implementation of each BMP for this MCM including timetables and measurable goals during this reporting period (mapping, screening, etc.).

Due to the formatting issue of this form, answer for this item is provided below between Part G and Part H. Please also refer to Programmatic Indicators report for other activities.

b) Describe implementation problems or challenges encountered, particularly as it relates to mapping and screening of outfalls during this reporting period.

Insufficient personnel and budgetary constraints have been the main obstacles for the implementation of this MCM. Although the mapping and screening of outfalls were both ranked at the BEST level by IDEM at the IDDE audit conducted on July 13, 2012, the screening of outfalls could be made better by increasing the screening frequency and using more advanced technology if the City's MS4 program had more manpower and budget to utilize on this MCM.

c) Identify changes made to the IDDE Plan during this reporting period if applicable.

IDDE Plan was reviewed by no changes were made to the plan during this reporting period.

d) Identify updates or revisions to IDDE ordinance or other regulatory mechanism made during this reporting period.

IDDE Ordinance was reviewed and no revisions were required.

e) Describe level of mapping and screening completed to date. If there are unmapped or unscreened outfalls, provide a plan and a timetable for completion.

All the mapping has been done. New stormwater structure is added to the map as it is installed. All outfalls have been screened as required by Rule 13. The mapping and screening have been ranked as the "BEST" according to the results of the IDDE audit conducted on July 13, 2012.

f) Other:

19 a)
BMPs identified in SWQMP Part C submitted in 2005:

BMP 1: Salt Brine usage in street de-icing
Timeline for Implementation: implemented winter 2004/2005
Measurable Goal: A reduction in salt usage in de-icing streets
Progress made towards the BMP: The City of Valparaiso has been using the least amount of salt possible for street de-icing while ensuring the streets are safe for vehicles to drive on in winter. However, the amount of salt used over years cannot be compared to evaluate the program performance as the weather each winter is different.

BMP 2: Monthly City Safety Meetings
Timeline for Implementation: Already in place
Measurable Goal: Time spent on Rule 13 discussion and awareness
Progress made towards the BMP: The Monthly City Safety Meetings have stopped. Since the program is very mature now, a regular meeting is not hold to discuss Rule 13. A meeting would be called on when it is needed to discuss the Rule and rule requirements.

BMP 3: Quarterly S.W.A.C. meetings
Timeline for Implementation: Implemented June of 2003
Measurable Goal: Rule 13 awareness to public
Progress made towards the BMP: Since the program is very mature now, the Quarterly S.W.A.C. meetings have stopped. Rule 13 education and awareness to public is now conducted in other ways. See Programmatic Indicators Report for the activities.

BMP 4: Prepare Illicit Discharge Ordinance
Timeline for Implementation: December 31, 2006
Measurable Goal: Adoption of Ordinance
Progress made towards the BMP: IDDE Ordinance was adopted in 2006.

BMP 5: Prepare Ordinance regarding Regulations Controlling Environmental Impacts from Land Disturbing Activities
Timeline for Implementation: December 31, 2005
Measurable Goal: Adoption of Ordinance
Progress made towards the BMP: the City of Valparaiso has in place, since 1996, an ordinance establishing the Department of Stormwater Management, including an article dealing with Erosion Control on Sites with Land Disturbing Activities. The article has been updated over years. The Stormwater Management Ordinance was updated with major revision in 2015.

BMPs identified in SWQMP Part C Update submitted in 2010:

BMP 1: Develop an Illicit Discharge Detection and Elimination Plan
Timeline for Implementation: Have the plan in place by March 2011
Measurable Goal: The City of Valparaiso together with Valparaiso University will develop and implement an illicit Discharge Detection and Elimination plan. The measurable goal is to have the plan in place and to start to implement the plan by January 2011.
Progress made towards the BMP: the plan has been in place since October 2010.

BMP 2: Perform dry weather screening outfall inspections
Timeline for Implementation: Start from year 2011
Measurable Goal: At least annually, each outfall is inspected with additional monitoring on the outfalls in those areas of the City that contain significant industrial facilities as well as those areas of the City that rely upon on-site wastewater treatment (septic systems).
Progress made towards the BMP: the City's MS4 outfalls have been prioritized and monitored/screened by City employees. The ones with higher priority are monitored more closely.

BMP 3: “Report-A-Polluter” program
Timeline for Implementation: Start from September 2010
Measurable Goal: Beginning September in 2010, the City of Valparaiso together with Valparaiso University will implement a “Report-A-Polluter” program to field complaints from the public on illegal dumping, illicit discharges, poor erosion control practices, and other activities within the City MS4 area that negatively impact stormwater quality. Citizens will have opportunity to submit such complaints through an email hotline.
Progress made towards the BMP: the program has been in place since September 2010.

BMP 4: Review City’s current Long Term Control Plan (LTCP) for combined sewer overflow (CSO)
Timeline for Implementation: By January 2011, review LTCP to ensure consistency between the LTCP with this MCM.
Progress made towards the BMP: the BMP has been accomplished.

PART H: CONSTRUCTION SITE STORM WATER RUN-OFF CONTROL - MINIMUM CONTROL MEASURE

20. List the best management practices for the construction site storm water run-off program identified in your SWQMP Part C and then respond to the following:

a) Identify progress made towards development and implementation of each BMP for this MCM including timetables and measurable goals during this reporting period.

BMP 1: Revision of City's Erosion Control Ordinance

Timeline for implementation: December 31, 2005

Measurable Goals: Adoption of revised ordinance by Common Council

BMP 2: Adopt Inspection Program (Part Revision of City's Erosion Control Ordinance)

Timeline for Implementation: December 31, 2005

Measurable Goals: Adoption of revised ordinance by Common Council

BMP 3: Reexamine Violation Fines and Enforcement (Part Revision of City's Erosion Control Ordinance)

Timeline for Implementation: December 31, 2005

Measurable Goals: Adoption of revised ordinance by Common Council

Progress made for the above three BMPs: The measurable goals of these BMPs have been accomplished years ago. The City of Valparaiso updated its Stormwater Management Ordinance again in 2015.

Also refer to Programmatic Indicators for other activities.

b) Describe program implementation partnerships and explain successes and barriers during this reporting period.

The City of Valparaiso and other MS4 entities in Northwest Indiana have formed a Stormwater Advisory Group (NISWAG) to share information and experience at implementation of this MCM. Setting up consistent standards for construction site stormwater management in the whole region is very important. It makes it easier for developers, builders and contractors to follow the rules, and for inspectors to do inspection and enforcement. From this aspect, this partnership has been very successful. The partnership also started to provide contractor training workshops.

Barriers: insufficient personnel and budgetary constraints of our MS4 Program are main obstacles for this MCM.

c) Identify the number of construction sites permitted during this reporting period and identify the number and type of enforcement actions taken against construction site operators during the same period.

Refer to Programmatic Indicators report for permitted construcion sites and enforcement actions.

d) Identify the number and types of training opportunities that were provided to contractors, developers, and builders during this permit period.

Regional contractor's workshop has been provided through partnerships yearly.

The "City of Valparaiso Erosion and Sediment Control Notes" is on the City's website and is available to all builders who have built in the City of Valparaiso during reporting period. The statement "See the "City of Valparaiso Erosion and Sediment Control Notes" for erosion control requirements." is required to be on site plans to make builders aware of the policies.

Outreach and education to construction personnel is also accomplished on an individual basis through emails, phone calls, in-person meetings, website, informational events, site reviews and permit application process.

The public education and outreach effort mentioned in the Programmatic Indicator report for Residents/General Public could also reach and educate construction personnel during reporting period.

e) MS4 personnel responsible for plan review, inspection, and enforcement of construction activities shall receive, at a minimum, annual training addressing appropriate control measures, inspection protocol, and enforcement procedures. Identify training provided to MS4 personnel responsible for these activities during this reporting period.

MS4 personnel worked to receive regular training throughout the year during the reporting period by attending programs, seminars, webinars, and reading publications such as Stormwater magazine and Storm Water Solutions magazine. A list of meetings and webinars the MS4 Coordinator attended during the reporting period is provided below between sections H and I.

f) Identify updates or revisions to the storm water construction ordinance or other regulatory mechanism made during this reporting period.

The Stormwater Management Ordinance and standards were revised and updated in June 2015; and no updates or revisions were made during this reporting period.

g) Other:

20 e)

1. 2/7/2019: 2019 LTAP Stormwater Drainage Conference at Purdue University, West Lafayette.
2. 5/13/2019 - 5/14/2019: Indiana MS4 Annual Meeting at Indianapolis.
3. 8/5/2019: Air Cooled Blast Furnace Aggregate - Lunch and Learn at Valparaiso City Hall.

4. 9/24/2019: “EPA Soak up the Rain Stormwater Mapping” Webinar, hosted by EPA, 12:30 PM - 2:00 PM CDT.
5. 10/16/2019: NISWAG meeting, presentation topics were “Septics in the Lake Michigan Watershed – Education and Outreach, and Partnerships & Discussion. Presented by Brianna Ciara, Lake Michigan Coastal Program” and “Shared Services Concept for GI Maintenance Discussion on implementation approaches. Presented by Bob Newport, OAI”.
6. 10/17/2019: Construction Phase Stormwater Pollution Prevention Plan Review Training, by Doug Wolf. Location was at Central Park Plaza, Valparaiso. Four employees from the City Engineering Dept attended the workshop.
7. 2/6/2020: 2020 LTAP Stormwater Drainage Conference at Purdue University, West Lafayette.
8. 2/18/2020: 2020 Northwest Indiana “Trained Individual” Erosion Control Construction Site Certification Workshop.
9. 9/10/2020, LTAP webinar: Right-of-Way Plant Concerns: Controlling the Plants that Can Harm You.
10. 9/16/2020-9/18/2020: INAFSM Virtual Conference.
11. 10/21/2020: NISWAG meeting with Staci Goodwin regarding audit, annual report and new permit.
12. 10/22/2020: “Concrete Washout Challenges Panel Discussion” held by Burke Webinar Series.

PART I: POST-CONSTRUCTION STORM WATER RUN-OFF CONTROL - MINIMUM CONTROL MEASURE

21. List the best management practices for post-construction storm water run-off control identified in your SWQMP Part C and then respond to the following:

a) Identify progress made towards development and implementation of each BMP in the SWQMP including timetables and measurable goals during this reporting period.

BMP 1: Controlled Discharge Required (City of Valparaiso Drainage Ordinance)
Timeline for Implementation: Currently in place
Measurable Goal: Continued application of the ordinance

BMP 2: Storm Sewers, Structures, Ditches, Swales, and Culverts (City of Valparaiso Drainage Ordinance)
Timeline for Implementation: Currently in place
Measurable Goal: Continued application of the ordinance

BMP 3: Detention Basins (City of Valparaiso Drainage Ordinance)
Timeline for Implementation: Currently in place
Measurable Goal: Continued application of the ordinance

BMP 4: Proper Design and Construction of Discharge Control Structure and Overflow (City of Valparaiso Drainage Ordinance)
Timeline for Implementation: Currently in place
Measurable Goal: Continued application of the ordinance, number of reported problems/complaints downstream

BMP 5: Requirement for Improved Storm Water Management with Renovation of Existing Developed Sites (City of Valparaiso Drainage Ordinance)
Timeline for Implementation: Currently in place
Measurable Goal: Number of renovated existing sites
Progress made for above BMPs: Continued application of the previous ordinance until the City of Valparaiso adopted the updated Stormwater Management Ordinance in 2015. The new ordinance has more stringent requirements on post construction stormwater runoff control. The link to the ordinance is provided on the City's website.

Please also refer to Programmatic Indicators for other activities.

b) Describe implementation problems encountered and changes due to ineffectiveness or infeasibility during this reporting period.
Insufficient personnel and budgetary constraints have been the main obstacles for the implementation of this MCM.

c) Describe program implementation partnerships and explain successes and barriers.
There is no partnership formed for the implementation of this MCM.

d) MS4 area personnel responsible for implementation of the post-construction minimum control measure shall receive, at a minimum, annual training. Identify training provided for this minimum control measure during this reporting period.
MS4 personnel worked to receive regular training throughout the year during this reporting period by attending programs, seminars, webinars, and reading publications. See the list provided in 20(e) for trainning during this reporting period.

e) Identify updates or revisions to the post-construction storm water ordinance or other regulatory mechanism made during this reporting period.
The Stormwater Management Ordinance and standards were revised and updated in June 2015; and no updates or revisions were made during this reporting period.

f) Other:

PART J: MUNICIPAL OPERATIONS POLLUTION PREVENTION AND GOOD HOUSEKEEPING - MINIMUM CONTROL MEASURE

22. List the best management practices for municipal operations pollution prevention and good housekeeping identified in your SWQMP Part C and respond to the following:

a) Identify progress made towards development and implementation of each BMP in the SWQMP including timetables and measurable goals during this reporting period.

BMP 1: Salt Storage Facility

Timeline for Implementation: 2007

Measurable Goal: Completion of the Facility

Progress has been made: The City of Valparaiso's Public Works Department constructed one salt storage facility in 2005 at 406 Don Hovey Dr., and another salt storage facility in 2014 at 1855 Joliet Rd. These two storage facilities allow the City to store the salt the City uses for deicing completely indoors.

BMP 2: Partnering with Valparaiso University regarding salt storage and management

Timeline for Implementation: 2007

Measurable Goal: Completion of agreement for V.U. to use the City's salt storage facility, end using its own salt storage fac ility, and therefore eliminate an unneeded potential for additional pollution.

Progress has been made: It was later determined by both the City and the University that it was not necessary to implement this identified BMP. Valparaiso University has its own covered salt storage at 406 Don Hovey Dr. The IDEM MS4 Coordinator Reggie Korthals visited this site at the audit for the MCMs 1, 2, and 6 in 2009 and had no issues with Vaparaiso University's salt storage. She also visited the City site on Don Hovey, and there were not any issues with it neither.

BMP 3: Physical Improvements to Public Works Department Regarding Water Quality

Timeline for Implementation: 2007

Measurable Goal: Completion of Improvements

Progress has been made: At the previous Public Works Campus at 406 Don Hovey Dr., the City of Valparaiso's Public Works Department purchased and constructed the salt storage facility in 2005. Also, secondary containment measures were installed for all storage of petroleum products to prevent any spillage from contaminating ground water. Fuel spill clean-up kits were purchased and placed by the facility's fuel island and other storage locations. In 2014, the City of Valparaiso constructed a new campus for Public Works Department at 1855 Joliet Rd. This campus has many stormwater BMPs installed to minimize polluted stormwater runoff. The BMPs included: water quality swales and basin installed onsite; a covered salt barn to store deicing materials; secondary containment for the brine tank; a fueling island with a cover, a 13' wide manmade berm on the south side of the island to prevent contaminated stormwater draining south, an emergency "e-stop" valve next to fuel island, a completely level slab at the fueling area so it will hold spills, and spill kit onsite to clean up if spill occurs; activities including sign making, vehicle maintenance and storage, are conducted indoors; drains indoor are connected to a sediment trap then an oil separator then to sanitary sewer; and also many spill kits and secondary containment in the Sign/Paint Shop and Vehicle Maintenance Shop.

Please also refer to Programmatic Indicators for other activities.

b) Describe implementation problems encountered and changes due to ineffectiveness or infeasibility as it relates to pollution prevention and good housekeeping at MS4 owned and operated facilities during this reporting period.

No problems during reporting period.

c) Identify storm water BMPs installed or initiated at MS4 owned and operated facilities.

During the reporting period, no storm water BMPs were installed at MS4 owned and operated facilities.

Many catch basins, intakes and manholes were installed along some streets during the reporting period -- please refer to the Programmatic Indicators report for the numbers of these structures installed during this reporting period.

d) Identify and describe appropriate storm water training provided to MS4 employees. Employees are required to have a minimum training once per year.

MS4 personnel worked to receive regular training throughout the year during this reporting period by attending programs, seminars, webinars, watching videos and reading publications. A list of meetings and webinars the MS4 Coordinator attended during the reporting period was provided in 20(e). The videos watched included "Rain Check -- Stormwater Pollution Prevention for MS4s", "Storm Watch -- Municipal Stormwater Pollution Prevention", "Spills & Skills-- Non-Emergency HazMat Spill Response Employee Training", and "Blue is the New Green", and the exampls of periodicals included the Stormwater magazine, and Storm Water Solutions magazine.

Other City employees received training by watching stormwater videos produced by Excal Visual Inc. and other sources, including "Rain Check -- Stormwater Pollution Prevention for MS4s", "Storm Watch -- Municipal Stormwater Pollution Prevention", "Spills & Skills-- Non-Emergency HazMat Spill Response Employee Training", and "Blue is the New Green".

City employees also received training through stormwater messages we put at Valpo Works city employee newsletter.

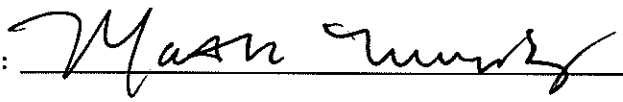
e) Other:

PART K: CERTIFICATION AND SIGNATURE

The individual listed in "PART A: GENERAL INFORMATION – MS4 OPERATOR" must sign the following certification statement:

"By signing this annual report, I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Type or Print Name: Matt Murphy

Signature:  3/30/2021 *(mm/dd/yyyy)*

List of Attachments

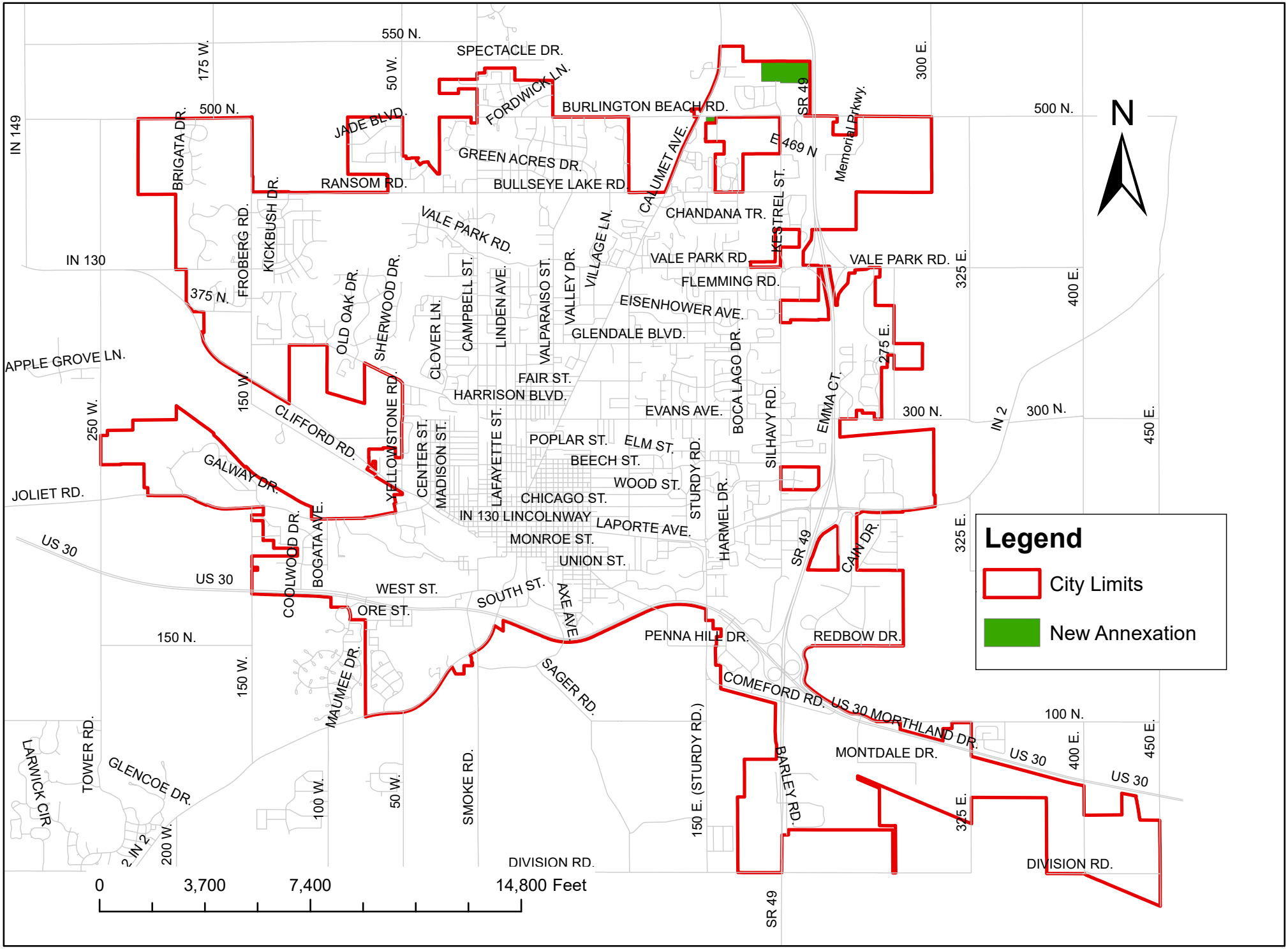
Attachment 1. Map of City of Valparaiso Limits as of December 31st, 2020 (for question 16b)

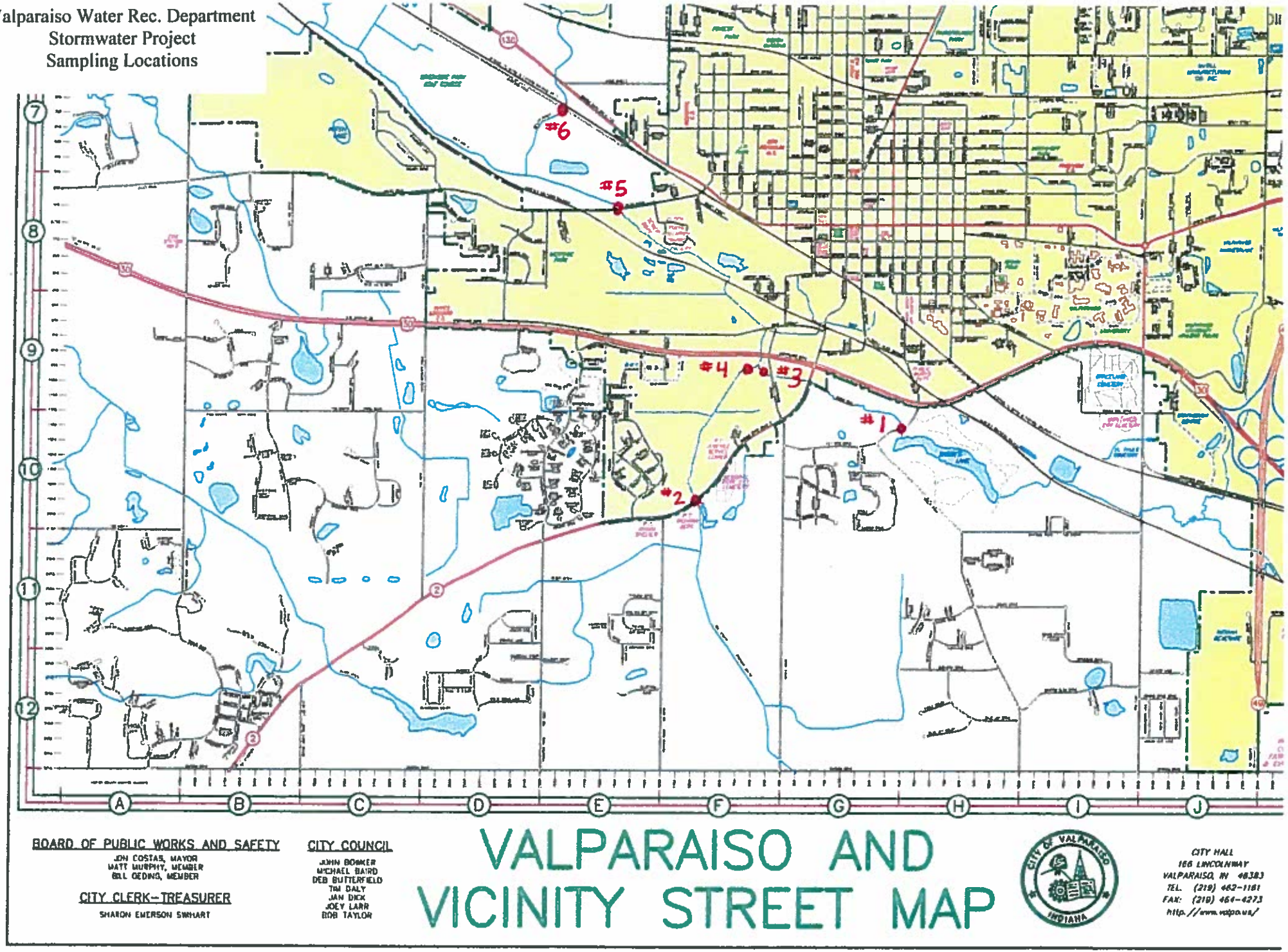
Attachment 2. Stream Water Quality Monitoring results (for question 16c)

- 2.1 Monitoring locations
- 2.2 Chemical monitoring by City of Valparaiso
- 2.3 Biological monitoring by Valparaiso University

Attachment 3. Programmatic Indicators Report

Attachment 1. City of Valparaiso Limits as of Dec. 31, 2020





Attachment 2.1 Monitoring locations

Attachment 2.2 Chemical monitoring by City of Valparaiso

Valparaiso Water Reclamation Department

2019 Stormwater Project

Sample Point	Date	Time	Collected By	Temp. Celcius	Rain Y/N	pH Stan. Units	D.O. mg/l	NH4 mg/l	PO4 mg/l	TSS mg/l	TBOD mg/l	E. Coli CFU/100 mls.
1	10/9/2019	7:45 a.m.	TF	16.0	N	8.0	8.9	0.148	0.044	5	3	8
2	10/9/2019	7:55 a.m.	TF	11.0	N	7.8	7.2	0.149	0.051	6	2	582
3	10/9/2019	8:03 a.m.	TF	13.0	N	8.0	8.4	0.137	0.048	8	2	74
4	10/9/2019	8:08 a.m.	TF	13.0	N	7.8	7.2	0.166	0.053	6	2	317
5	10/9/2019	8:25 a.m.	TF	14.0	N	7.9	8.5	0.210	0.260	6	2	209
6	10/9/2019	8:34 a.m.	TF	12.0	N	8.0	9.5	0.191	0.012	4	2	80
1	10/16/2019	7:18 a.m.	TF	11.0	N	8.0	9.9	0.053	0.064	8	4	6
2	10/16/2019	7:31 a.m.	TF	10.0	N	7.8	8.2	0.090	0.061	10	2	237
3	10/16/2019	7:41 a.m.	TF	10.0	N	7.8	9.1	0.168	0.103	32	2	49
4	10/16/2019	7:46 a.m.	TF	10.0	N	7.8	8.1	0.111	0.059	6	2	250
5	10/16/2019	8:08 a.m.	TF	11.0	N	7.9	9.2	0.122	0.246	8	2	115
6	10/16/2019	8:30 a.m.	TF	10.0	N	7.9	9.9	0.109	0.022	6	2	124
1	10/23/2019	8:00 a.m.	TF	9.0	N	7.8	10.1	0.067	0.072	14	3	22
2	10/23/2019	8:10 a.m.	TF	9.0	N	7.9	9.6	0.079	0.039	8	<2	53
3	10/23/2019	8:17 a.m.	TF	10.0	N	7.8	8.2	0.119	0.051	6	<2	461
4	10/23/2019	8:23 a.m.	TF	10.0	N	7.8	8.2	0.096	0.051	6	<2	275
5	10/23/2019	8:54 a.m.	TF	6.0	N	7.9	9.3	0.139	0.290	4	<2	84
6	10/23/2019	8:40 a.m.	TF	10.0	N	7.9	9.7	0.153	0.036	19	<2	49
1	10/30/2019	8:59 a.m.	TF	8.8	Y	7.9	11.0	0.01	0.076	10	3	570
2	10/30/2019	8:46 a.m.	TF	6.6	Y	7.5	8.9	0.058	0.108	20	<2	2,908
3	10/30/2019	8:29 a.m.	TF	10.0	Y	7.7	10.4	0.056	0.084	19	<2	857
4	10/30/2019	8:38 a.m.	TF	9.4	Y	7.6	8.5	0.069	0.100	19	<2	996
5	10/30/2019	8:20 a.m.	TF	7.7	Y	7.7	9.9	0.068	0.307	24	<2	713
6	10/30/2019	8:05 a.m.	TF	6.6	Y	7.6	11.2	0.068	0.086	115	4	4,611

Note: Sampling and anaylsis conducted by the Valparaiso Water Reclamation Department.

Attachment 2.2 Chemical monitoring by City of Valparaiso

Valparaiso Water Reclamation Department

2020 Stormwater Project

Sample Point	Date	Time	Collected By	Temp. Celcius	Rain Y/N	pH Stan. Units	D.O. mg/l	NH4 mg/l	PO4 mg/l	TSS mg/l	TBOD mg/l	E. Coli CFU/100 mls.
1	10/8/2020	7:13 AM	TF	10.0	N	8.4	9.1	0.020	0.055	12	4	4
2	10/8/2020	7:26 AM	TF	10.0	N	8.0	7.2	0.045	0.045	6	<2	388
3	10/8/2020	7:35 AM	TF	9.0	N	8.0	8.1	0.020	0.139	41	2	52
4	10/8/2020	7:40 AM	TF	10.0	N	7.9	6.7	0.043	0.098	30	<2	649
5	10/8/2020	8:07 AM	TF	9.0	N	8.0	8.3	0.058	0.236	10	<2	162
6	10/8/2020	7:55 AM	TF	10.0	N	8.1	9.6	0.054	0.022	6	<2	76
1	10/14/2020	7:45 AM	TF	8.0	N	8.2	8.2	0.031	0.051	8	<2	150
2	10/14/2020	7:57 AM	TF	9.0	N	8.0	7.4	0.048	0.087	15	<2	326
3	10/14/2020	8:08 AM	TF	9.0	N	8.1	9.6	0.039	0.042	6	<2	461
4	10/14/2020	8:13 AM	TF	8.0	N	8.0	7.4	0.063	0.061	9	<2	158
5	10/14/2020	8:53 AM	TF	9.0	N	8.0	8.6	0.082	0.203	6	<2	210
6	10/14/2020	8:40 AM	TF	10.0	N	8.0	9.6	0.062	0.028	2	<2	214
1	10/21/2020	7:42 AM	TF	10.0	N	8.1	9.6	0.060	0.060	8	<2	6
2	10/21/2020	7:53 AM	TF	9.0	N	7.8	6.7	0.067	0.067	19	<2	148
3	10/21/2020	8:01 AM	TF	10.0	N	7.9	7.9	0.058	0.058	8	<2	70
4	10/21/2020	8:09 AM	TF	10.0	N	7.9	6.7	0.069	0.069	12	<2	93
5	10/21/2020	8:46 AM	TF	9.0	N	7.9	8.4	0.082	0.182	3	<2	96
6	10/21/2020	8:37 AM	TF	9.0	N	8.0	9.1	0.043	0.022	2	<2	55
1	10/28/2020	7:48 AM	TF	10.0	N	8.0	10.1	0.120	0.069	14	<2	23
2	10/28/2020	7:56 AM	TF	10.0	N	7.9	8.2	0.088	0.055	8	<2	93
3	10/28/2020	8:05 AM	TF	9.0	N	8.0	9.3	0.100	0.037	5	<2	35
4	10/28/2020	8:11 AM	TF	10.0	N	8.0	9.3	0.091	0.037	6	<2	54
5	10/28/2020	8:45AM	TF	10.0	N	8.0	9.6	0.098	0.162	3	<2	32
6	10/28/2020	8:31 AM	TF	9.0	N	8.0	10.2	0.060	0.026	3	<2	133

Note: Sampling and anaylsis conducted by the Valparaiso Water Reclamation Department.

Attachment 2.3 Biological monitoring by Valparaiso University

Salt creek biomonitoring data
Valparaiso University, Valparaiso, IN
BIO 440 Ecology, sampled last week of OCT/first of NOV

SITE1	*4 groups, 20 samples*											*5 groups*			*5 groups*	
GROUP1	2004	2005	2006	2007	2008	2009	2010T	2010R	2011	2012	2013	2015	2017	2018	2019	2020 no data
stonefly	2		3	2	2	1	2	3		1	4	1	2		3	
mayfly		6	5	4	3	9	4	1	3		1	3	1	2	2	
caddis fly			110	46	5	73	2	5	23	11	6	182	5	9	22	
dobsonfly			1			1			3						2	
riffle beetle	1		4	5	2		25	3			3		4	1		
water penny		20+				6	1	1	6						1	
right snail			1	5			5	4	7			1			3	
GROUP 2																
damselfly		4	3	3	1	6	10	7	7	26	3	19	55	4	7	
dragonfly		1				1	1	2				3				
sowbug	100+	80+	46	14	55	105	13	44	242	56	11	16	7	2		
scud	4	30+	37	15	16	18	7	2	12	4	1	7	2	5	15	
cranefly		4	1	1	4	7	4	2	2		1	1			1	
clams		12	9	1			1	29	5	3	14	4	3	17	19	
crayfish											1		2			
GROUP 3																
midges			3	8	2	5	9	2	12	1		2		3	3	
black fly				51	8	3	4	1	2	3	1		1	4	26	
planaria	1	47+	22		37	24	130	19	107	281	231	337	406	442	28	
leech	1	3	13	3		1	2	2	4	2	1			5	3	
GROUP 4																
left snail		2	1	1	1		7	2		9		6	5	1	3	
aquatic worms	3	3	6	16	10		18	1	3		5			3	14	
blood midge			11	2	3	22	1	3	6	18	2	2	2		8	
rat-tailed maggot	1						0	1								
PTI	*23*	*32*	*48*	*44*	*37*	*44*	*53*	*54*	*45*	*30*	*42*	*44*	*37*	*35*	*47*	
date tested	2-Nov	8-Nov	7-Nov	6-Nov	4-Nov	3-Nov	2-Nov	4-Nov	1-Nov	6-Nov	5-Nov	3-Nov	7-Nov	31-Oct	6-Nov	

Attachment 2.3 Biological monitoring by Valparaiso University

SITE 2	*4 groups, 20 samples*										5 groups-20 samples			5 groups-20 sa	ups-20 sa	
GROUP1	2004	2005	2006	2007	2008	2009	2010T	2010R	2011	2012	2013	2015	2017	2018	2019	2020
stonefly	3		1	4	4		17	1	1			1	3		5	4
mayfly	14	12	7	19	5	5	48	18	9	121	30	30	15	37	25	37
caddis fly	5	20+	12	5	14	2	8	3	65	137	31	14	7	5	5	9
dobsonfly	1	4					0	2	1		1	3		1		1
riffle beetle					6	1	2	3				1	3	8		1
water penny						2					15	1				
right snail			1	1		1	0	1		5	3				1	3
GROUP 2																
damselfly	3	4		5	7	8	4	39	2	26	7	12	13	4	17	17
dragonfly		1	2		1		1	0			1				1	
sowbug	21+	15	126	15	25	17	6	62	8	28	19	11	14	6	9	4
scud	28+	16	20	18	24	50	30	51	25	36	88	49	46	25	47	67
cranefly		1								1		3				
clams		3	2			1						1	5		7	14
crayfish		1		1						1	2		1			2
GROUP 3																
midges	1		6	1	5	6	11	3	22	2	4	2		14		12
black fly					4	9				1	0	1		1		1
planaria		3			3	3	3	0		13	18	1	19	16		12
leech		1		1		2	1	0							1	
GROUP 4																
left snail	3		2		1		8	11	3	2		1			2	2
aquatic worms		5	7	7	11		11	10	2	6	27	6	2	3	3	8
blood midge	2	9			3	3	7	2	5	41	13	10	5	1	1	16
rat-tailed maggot																
PTI	*29*	*39*	*32*	*33*	*37*	*45*	*37*	*38*	*30*	*36*	*41*	*48*	*33*	*33*	*36*	*48*
	9-Nov	8-Nov	7-Nov	6-Nov	4-Nov	3-Nov	2-Nov	4-Nov	1-Nov	6-Nov	5-Nov	3-Nov	7-Nov	31-Oct	6-Nov	29-Oct

Attachment 2.3 Biological monitoring by Valparaiso University

SITE 3	*4 groups, 20 samples*									5 groups-20 samples			5 groups-20 samples		
	2004 no data	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015	2017	2018	2019	2020 no data
GROUP1															
stonefly				2	3	3	1		1					1	
mayfly		15		6		8	2	13	10	1		1	4	3	
caddis fly		8	8	15		51	10	5	13	17	19	12	8	9	
dobsonfly					1			1						1	
riffle beetle		1		1		5		5			1	2	3		
water penny						2	1								
right snail		12	2			2	4	1	2			1	2		
GROUP 2															
damselfly		6	1	1	6	10	1	14	31	18	7	9	3	3	
dragonfly		2				1									
sowbug		20+	6	4	16	65	46	25	39	7	20	6	6	7	
scud		20+	10	12	22	28	18	11	9	33	16	9	9	38	
cranefly			2	2		*9*			1					*1*	
clams		20+	45	20		1	2	1	9	2	2	7	7	2	
crayfish		1								1				1	
GROUP 3															
midges			8	1	5	14	26	18		5			3		
black fly			14		1	3	1			1			3		
planaria		7	6		1	22	6	7	3	3		12	3		
leech		8		1		1			1	2			1		
GROUP 4															
left snail		8		1		1	6	1	6	4	1			3	
aquatic worms		2	4	1	2	1	10	14	20	4	7	9		6	
blood midge		1	5	6		34	83	41	32	31	56		10		
rat-tailed maggot															
PTI	*NA*	*41*	*31*	*38*	*24*	*53*	*41*	*42*	*38*	*34*	*23*	*31*	*37*	*36*	
date	NA	8-Nov	7-Nov	6-Nov	4-Nov	3-Nov	2-Nov	1-Nov	6-Nov	5-Nov	3-Nov	7-Nov	31-Oct	6-Nov	

Attachment 2.3 Biological monitoring by Valparaiso University

SITE 4	*4 groups, 20 samples*											5 groups-20 samples		5 groups-20 samples		
	2004	2005	2006	2007	2008	2009	2010	no data	2011	2012	2013	2015	2017	2018	2019	2020
GROUP1																
stonefly	3		5	4	1	2	2		1				2			2
mayfly	3	5	4	12	15	14	8		24	17	25	17	3	21	10	16
caddis fly	1	2	18	34	3	14	44		8	7	7	1	10	7	4	7
dobsonfly	1	1	1	6	4	5			2		3			1	1	2
riffle beetle	3		3	2			5		2	5		1	1			3
water penny			1	2		5	2		4	8	1		16			10
right snail	2			9		1				10	1	3	11		3	7
GROUP 2																
damselfly	1	12	3	2	4	15	9		8	14	10	3	8	5	9	13
dragonfly		1		3	1		1			2				2	3	1
sowbug	5	14	12	11	10	41	24		39	7	17	21	7	4	13	30
scud	9	1	7	4	5	25	5		17	17	7	41	12	8	12	16
cranefly		3	2	4		1				1		4	*1*			
clams		2	6	2		3	14		1	35	5	2	24	6	8	13
crayfish	1	2	1		1		1		2			1			3	1
GROUP 3																
midges	5	5	9	15	1	9	10		6	8	2	3		3	6	5
black fly		1	2	5		1								1	1	1
planaria			1	2			2			3	4		1	3	1	4
leech		11	1	1	1					5	1				2	4
GROUP 4																
left snail	2	1				2	6			9	1		1		3	5
aquatic worms	6	6	1	9	5		17		26	25	26	6	4	1	4	8
blood midge	5	1	4	13	8	19	16		9	38	33	15	3	8	4	37
rat-tailed maggot	1			2		1							0			
PTI	*42*	*42*	*52*	*57*	*37*	*46*	*45*		*43*	*47*	*41*	*38*	*44*	*36*	*45*	*57*
	2-Nov	1-Nov	31-Oct	31-Oct	28-Oct	27-Oct	28-Oct		25-Oct	23-Oct	29-Oct	27-Oct	31-Oct	24-Oct	23-Oct	22-Oct

Attachment 2.3 Biological monitoring by Valparaiso University

SITE 5	*4 groups, 20 samples*										5 groups			5 groups	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015	2017	2018	2019	2020 no data
GROUP1															
stonefly	2			1		5	3					2			
mayfly	4		2	2	1						2	3	2		
caddis fly	2	13	21	55	2	23	7	13	3	13	60	11	39	10	
dobsonfly				10		2			1		1				
riffle beetle			3	1		3		1	9	6				1	
water penny				4											
right snail				1					1						
GROUP 2															
damselfly	1	7		5		3		5	29	6	12	5	3	10	
dragonfly															
sowbug	11	24	21	34	4	37	11	21	5	18	13	50	6	*2*	
scud	3	2	1	9	2	15	3	19	1	5	9	61	16	18	
cranefly	3					1		11	3			2	1	4	
clams							3	5	40	5		6	5	9	
crayfish			1									1			
GROUP 3															
midges	2	1	3	9	2	9	2	18	3	2	18		1	1	
black fly	1			2	10	1			0	3	7		14		
planaria	9	22	4	2	18	2	9	19	5	47	17	39	12	1	
leech	1	10		19		14	1	2	9		3	2			
GROUP 4															
left snail						1			2			1	1		
aquatic worms	2	2	4	4	4	2	3	17	44	14	3	5	14		
blood midge	12	6	17	7	4	18	41	54	43	4	25	5	1	2	
rat-tailed maggot			1	1					1						
PTI	*34*	*21*	*28*	*48*	*22*	*39*	*25*	*31*	*41*	*28*	*31*	*37*	*32*	*28*	
	9-Nov	1-Nov	31-Oct	31-Oct	28-Oct	27-Oct	28-Oct	25-Oct	23-Oct	29-Oct	27-Oct	31-Oct	24-Oct	23-Oct	

Attachment 3. Programmatic Indicators Report for 2019 and 2020

1. Number or percentage of citizens, segregated by type of constituent as referenced in section 12(a) of this rule, that have an awareness of storm water quality issues.

Constituent referenced in section 12(a) of the rule include residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel within the MS4 area.

(1) Residents

1) Septic system owners
    a. Mailed 131 copies of "Do your Part – Be Septic Smart!" brochure to septic system owners in the City of Valparaiso, on 10/13/2020.
2) Homeowner of new houses
    a. The "A homeowner's guide to Soil Erosion Control" brochure was provided to some residents who purchased a new house with unvegetated yards.
3) Pet owners
    a. The City of Valparaiso has been providing dog waste bag canisters and bags at City Hall for pet owners to pick up. Ordered 400 Bags on Board Custom Label Dispensers with 6,000 bags (15 bags/dispenser*400 dispensers) on 4/11/2019, and 13,440 refill bags (140 bags/pack*96 packs) on 2/13/2020.
4) Neighborhood Groups
    a. The Valparaiso Neighborhood Toolkit was created and published in Feb. 2019 by Community Engagement Department, and Go Green and stormwater quality management was included in the toolkit. The toolkit has been promoted to more than 20 neighborhoods and is available to all residents in the City.
5) Schools and Universities
    a. Stormwater education provided to schools through partnership with Recycling and Waste Reduction District of Porter County (RWRDPC).
        i. Classroom education outreach. A total of 1,674 students from Valparaiso schools were reached in 2019, and 378 students for 2020. See Appendix A for details.
    b. Presentation provided to students at Valparaiso University by MS4 Coordinator:
        i. A presentation on MS4 Program was given to Prof. Peter Weiss Hydrology Class (34 students), on 4/5/2019.
        ii. A presentation on MS4 Program was given to Prof. Laurie Eberhardt Ecology class (19 students), on 10/21/2019.
        iii. A presentation on MS4 Program was given to Prof. Peter Weiss Hydrology Class (26 students) using the google meet on 4/17/2020.
6) General public
    a. 500 MS4 Stormwater pens (with the message as: City of Valparaiso MS4 Stormwater Program WWW.valpo.us/MS4 (219) 462-1161 "Only Rain in the Drain") were purchased on 11/21/2019 and provided at City Hall for public to pick up for free.
    b. City Talk Newsletter: articles were published in City Talk Quarterly Newsletter mailed out to all City residents and businesses.

c. "Household Guide to Preventing Stormwater Pollution" brochure and message in the November City Talk Now newsletter, which was sent out to subscribers, including both city employees and residents.
d. Brochures: City provided brochures at local festivals/events (such as the Market Meet-up event in Summer 2019), at display board at City Hall, and within offices in City Hall.
e. MS4 Website: MS4 program maintained and updated an MS4 program website.
f. Facebook: MS4 events and articles also announced on the City's facebook.
g. Signage including those for rain gardens and watersheds was installed.

(2) Visitors

1) The Public education and outreach effort mentioned above for General Public in item 6 could also reach and educate people who visited the City of Valparaiso during reporting period.

(3) Public service employees

1) Valpo Works Newsletter: IDDE and MS4 message was published in December 2020 Valpo Works, the newsletter for and distributed to all city employees.
2) "Household Guide to Preventing Stormwater Pollution" brochure and message in the November City Talk Now newsletter, which was sent out to subscribers on 11/23/2020, including both city employees and residents.
3) The Public education and outreach effort mentioned above for Residents/General Public could also reach and educate public service employees during reporting period.
4) Regular training was provided to City employees in several departments, including Public Works, Parks, Valparaiso City Utilities, and Engineering.
5) Sent the "MS4 for Elected Officials" video to the elected officials, City Administrator, Engineering Director, Utilities/Public Works Director, and Chief Deputy Engineer, on 12/11/2020.

(4) Commercial and industrial facilities

1) The Public education and outreach effort mentioned above for Residents/General Public could also reach and educate commercial and industrial facilities during reporting period.

(5) Construction personnel

1) The Contractors Workshop was hosted by the collaboration of MS4 entities in northwest Indiana on 2/26/2019 and 2/18/2020.
2) The "City of Valparaiso Erosion and Sediment Control Notes" was made available to all builders who have built in the City of Valparaiso during reporting period.
3) Sent out the EPA's concrete washout brochure to 2 builders during the reporting period.
4) Outreach and education to construction personnel is also accomplished on an individual basis through emails, phone calls, in-person meetings, website, informational events, site reviews and permit application process.
5) The Public education and outreach effort mentioned above for Residents/General Public could also reach and educate construction personnel during reporting period.

2. Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program.

(1) Meetings

1) The Valparaiso City Utilities board meetings (twice per month) where stormwater projects are discussed are open to the public.
2) City Council meeting and Board of Public Works and Safety meeting where stormwater projects are discussed are open to the public.

(2) Arbor Day Celebration and Tree Planting events

1) A tree planting demonstration was hosted by an ISA certified arborist from Public Works team on Friday 4/26/2019, at the intersection of Freeman and College.
2) In celebration of a belated Arbor Day, Valparaiso Public Works (VPW) partnered with neighborhood groups to host two tree planting events in October 2020.
    a. In Central Neighborhood, 25 volunteers came together to plant about 20 trees.
    b. In Banta Neighborhood about a dozen volunteers helped to plant 29 trees.

(3) Rain Barrel Program

The City of Valparaiso has a rain barrel program through which rain barrels are provided to city residents and businesses at a reduced price for them to manage stormwater onsite. For this reporting period, 31 rain barrels were distributed out in 2019, and 18 in 2020.

(4) Pet Waste Management

The City of Valparaiso has a pet waste management program through which dog waste bags are provided to pet owners for free. During this reporting period, a total of 19,440 bags were purchased, and a portion has been distributed out.

(5) HHW and E-Waste Collection

The City of Valparaiso partnered with RWRDPC to collect E-Waste and HHW. See the Appendix B for the HHW and E Waste collected during reporting period.

The E-Waste dropped off at the Valparaiso Compost site were 248,164 pounds for 2019 and 412,296 pounds for 2020. In addition, Valparaiso collected 108,398 pounds in 2019.

The HHW collected at Expo Center site was 85,262 (51,599+33,663) pounds for 2019, and 76,081 (37,477+38,604) pounds for 2020.

(6) Yard waste management

The City of Valparaiso partnered with RWRDPC to collect yard waste and make into compost, mulch and wood chips. The products are provided to city and porter county residents to use.

The RWRD manages four compost sites within the County including Valparaiso (at 2150 W. Lincolnway), Boone Grove, Chesterton, and Portage, and the following data was for all four sites: a total of 85,139 cubic yards of materials (including grass, leaves, brush, mixed yard waste, logs, Christmas trees and other) were collected during 2019, and 89,055 cubic yards for 2020.

(7) Report-A-Polluter Program

The City of Valparaiso has a Report-A-Polluter program. An email hotline (MS4@valpo.us) was provided to public to submit information to the City on illegal dumping, illicit discharges, poor erosion control practices, and other activities within the City MS4 area that negatively impact stormwater quality. Issues can also be reported through the Visual Valpo website.

3. Number or percentage of citizen constituents that participate in storm water quality improvement programs.

See PI #2.

4. Number and location of storm drains marked or cast, segregated by marking method.

Storm drains located within City facilities have been marked with blue paint. In addition, curb inlets and drains in newly developed and redeveloped areas have environmental signage stamped into the castings.

5. Estimated or actual linear feet or percentage of MS4 mapped and indicated on an MS4 area map.

All the known MS4 has been mapped and indicated on the MS4 area map.

6. Number and location of MS4 area outfalls mapped.

A total of 193 outfalls which discharge water to creeks have been mapped on the MS4 area map. Among these outfalls, 137 discharges to receiving waters, and 58 are MS4 outfalls which are owned by the City and discharge into the City's receiving waters (Solid blue line on USGS Quadrangle Map). See the Storm Sewer map in Appendix C for locations.

7. Number and location of MS4 area outfalls screened for illicit discharges.

During this reporting period, all MS4 outfalls discharging into the City's 6 Receiving Waters were screened for illicit discharges.

8. Number and location of illicit discharges detected.

Five illicit discharges were detected during this reporting period. Thy are listed below.
58 Appletree Ln – Oil or grease discharged out from garage and drained down to street.
2556 Beauty Creek Dr – Car parked in front of the house leaked
508 Glendale Blvd – Laundry water discharged out of the house
453 Golfview Blvd – Fish kill after pavement resurfacing
2420 Laporte Ave – Trash in stormwater detention ponds in the area

9. Number and location of illicit discharges eliminated.

All the five illicit discharges detected during this reporting period were eliminated. See #8 for locations and details of the illicit discharges.

10. Number of and estimated or actual amount of material, segregated by type, collected from HHW collections in the MS4 area.

    See the Appendix B for the HHW and E Waste collected during reporting period.

11. Number and location of constituent drop-off centers for automotive fluid recycling.

    The businesses located within City of Valparaiso limits which accept common car wastes include: AutoZone (1010 Calumet Ave, Valparaiso), Advance Auto Parts (3002 Calumet Ave. Valparaiso), Currie Motors Ford (2052 US 30, Valparaiso), Brown Tire (2404 Calumet Ave., Valparaiso), Tractor Supply Company (2500 Morthland Dr, Valparaiso), Valparaiso Tire (1250 Horse Prairie Ave, Valparaiso) and Walmart (2400 Morthland Dr., Valparaiso). The HHW collections also accept automotive fluids.

12. Number or percentage of constituents that participate in the HHW collections.

    During the reporting period, four collection events were held at Expo Center, including 2 in 2019 and 2 in 2020. The car counts for these events were: event 1 in 2019, 661 cars; event 2 in 2019, 473 cars; event 1 in 2020, 469 cars; and event 2 in 2020, 586 cars. The information can also be found in the Appendix B.

13. Number of construction sites obtaining an MS4 entity-issued storm water run-off permit in the MS4 area.

    A total of 432 Erosion Control Permits were issued during the reporting period, which included the construction of new homes, new commercial and industrial facilities, installation of inground swimming pools, demolition of structures, and other site works which disturbs soil. Among these projects, 24 were subject to the regulation of Indiana Rule 5 and required the permit.

14. Number of construction sites inspected.

    All the Rule 5 construction sites which land disturbing activities have started were inspected. 90% of non- Rule 5 construction sites were inspected.

15. Number and type of enforcement actions taken against construction site operators.

    During reporting period, a total of 25 Notice of Erosion Control Violation were generated using the Trakit software (therefore there was a formal paper copy of the NOV) and issued. Among those 23 were fines, and 2 were warnings. In addition, a lot more warnings were issued via sending emails to site operators or talking to the site operators on site or over phone calls.

16. Number of, and associated construction site name and location for, public informational requests received.

    During reporting period, we have received requests asking for information on the following three projects: Hawthorne East (41°30’42”N, 87°01’35”W), Crew Car Wash (41°28’10”N, 87°01’42”W) and Brooks Development (41°29’47”N, 87°04’50”W). See the latitude and longitude in parentheses for locations.

17. Number, type, and location of structural BMPs installed.

The tables below show the approximate number of structures installed and footage of pipe installed in 2019 and 2020:

YEAR	LOCATION DESCRIPTION	# OF STRUCTURES INSTALLED			FOOTAGE OF PIPE INSTALLED
		CATCH BASINS	INTAKES	MANHOLES	
2019	459 SHEFFIELD DR	0	1	0	14
2019	HAWTHORNE EAST SUB	14	5	6	1,951
2019	NAPOLEON ST - N. OF HARRISON	0	10	0	827
2019	PEPPER COVE PHASE 2	14	11	2	2,037
2019	SILHAVY & LAPORTE ROUNDABOUT	5	8	39	3,420
	2019 TOTALS:	**33**	**35**	**47**	**8,249**

YEAR	LOCATION DESCRIPTION	# OF STRUCTURES INSTALLED			FOOTAGE OF PIPE INSTALLED
		CATCH BASINS	INTAKES	MANHOLES	
2020	304 OAK ST	0	1	0	112
2020	304 STANLEY ST	0	1	0	70
2020	500 NORTH - EAST OF SR 49	0	4	1	586
2020	BURLINGTON BEACH RD @ WALDEN POND	0	0	0	50
2020	BURLINGTON BEACH RD PROJECT	0	28	22	3,517
2020	DEL VISTA DR PROJECT	31	1	1	5,080
2020	HARRISON WEST SUB	0	0	0	98
2020	MARIESTAD DR	0	1	0	152
2020	PRENTISS DR	0	0	0	42
2020	RANSOM RD - EAST OF BROOKSHIRE DR	0	0	0	56
	2020 TOTALS:	**31**	**36**	**24**	**9,763**

18. Number, type, and location of structural BMPs inspected.

Structural BMPs inspected by the City employees included City owned ponds and rain gardens/bioswales installed on City properties.

The City owned ponds include: Thorgren Basin, Wall Street Basin, Franklin Street Basin, Chicago Street Basin, Candlewood Detention Basin, Porter's Vale pond, Old Fairground Park, Silhavy St Basin and Hotter Lagoon.

Rain gardens/bioswales installed on City properties include: Forest Park rain gardens, Sturdy Road/Laporte Ave roundabout rain garden, North Calumet Ave rain garden, Central Park rain gardens, and Jefferson St/Lafayette St rain gardens.

The City also inspected and maintained the rain gardens installed on Valparaiso Community School's property at Central Elementary School.

19. Number, type, and location of structural BMPs maintained or improved to function properly.

All the rain gardens and bioswales installed in the City's Right-of-Way were maintained at least annually by the Valparaiso Parks Department.

The City owned ponds were mowed by City employees regularly during growing season. The ponds were inspected and debris at the grates was removed when City employees were there mowing the ponds.

See PI #18 for number and location of the rain gardens/bioswales, and City owned ponds.

20. Type and location of nonstructural BMPs utilized.

(1) Public Education and Outreach/Public Participation and Involvement (See PI #1 and #2)
(2) IDDE (See PI #8 and #9)
(3) HHW, E-waste, and other materials collection (See PI #10, PI #11, and PI #12)
(4) Street sweeping throughout the city at city roads and city facilities (such as parking lots)
(5) Catch basin/intake cleaning throughout the City
(6) Yard waste and leaf collection throughout the City
(7) Trash collection throughout the City
(8) Roadside trash pickup
(9) Rain barrel program
(10) Dog waste management campaign

21. Estimated or actual acreage or square footage of open space preserved and mapped in the MS4 area, if applicable.

Open spaces preserved and mapped in the MS4 area include the City's parks (approximately 165 acres) and the Forest Park Golf Course (approximately 122 acres). Rogers-Lakewood Park, the Creekside Golf Course, and two other parcels owned by the City of Valparaiso Parks Department but not within City limits, are not included in these numbers.

22. Estimated or actual acreage or square footage of pervious and impervious surfaces mapped in the MS4 area, if applicable.

All the pervious and impervious surfaces have been mapped in the MS4 area. As of Dec. 2020, the total area of the City of Valparaiso was 16.41 square miles, and of which, about 33.21% was covered by impervious surfaces.

23. Number and location of new retail gasoline outlets or municipal, state, federal, or institutional refueling areas, or outlets or refueling areas that replaced existing tank systems that have installed storm water BMPs.

During the reporting period, there were no new retail gasoline outlets or municipal, state, federal, or institutional refueling areas, or outlets or refueling areas that replaced existing tank systems that have installed storm water BMPs within the MS4 area.

24. Number and location of MS4 entity facilities that have containment for accidental releases of stored polluting materials.

All the MS4 entity facilities which have polluting materials stored have some type of containment. The major ones include the following 11 facilities:
(1) Public Works Campus (1855 Joliet Road)
(2) Valparaiso Compost site (2150 W. Lincolnway)
(3) VCU Water Operations Flint Lake Plant (1903 Pumping Station Road)
(4) VCU Water Operations Airport Plant (3800 Redbow Drive)
(5) VCU Elden Kuehl Pollution Control Facility (1251 Joliet Road)
(6) VCU Sewer Collections/Water Distribution facility (1855 Joliet Road)

(7) Parks and Recreation Department Mechanical Shop (3210 Campbell Street)
(8) Parks and Recreation Department Horticulture Office (2906 Campbell Street)
(9) Parks and Recreation Department Creekside Golf Course (2355 Clifford Rd)
(10) Parks and Recreation Department Forest Park Golf Course (1155 Sheffield Drive)
(11) Former Public Works Campus. It is now used by multiple entities (406 Don Hovey Dr)

25. Estimated or actual acreage or square footage, amount, and location where pesticides and fertilizers are applied by a regulated MS4 entity to places where storm water can be exposed within the MS4 area.

The City currently applies pesticides, herbicides, and/or fertilizers to some areas within its parks (applied mostly on athletic field areas), and Forest Park Golf Course. Approximately 41 acres has pesticides, herbicides, and/or fertilizers applied within our parks, 38 acres on our golf course, and approximately 3 acres of miscellaneous City property. These estimates are based on information provided from our Parks Department.

26. Estimated or actual linear feet or percentage and location of unvegetated swales and ditches that have an appropriately sized vegetated filter strip.

All the swales and ditches within the City of Valparaiso limits are vegetated.

27. Estimated or actual linear feet or percentage and location of MS4 conveyances cleaned or repaired.

The following table shows the amount of cleaned storm lines, cleaned intakes and the amount of debris removed, and treated intakes for mosquitoes during the reporting period. The table also contains the linear feet of televised storm lines during reporting period.

	Cleaned Storm Lines (ft)	Cleaned Intakes (number)	Debris Collected from Intakes (Cubic Yds)	Treated Intakes (number)	Televised Storm Lines (ft)
2019	368	587	111.36	207	10,394
2020	1,671	131	18.49	76	13,264

The table below shows the repaired storm mains, storm manholes and intakes during the reporting period.

	Repaired Storm Mains (number)	Repaired Storm Manholes (number)	Repaired Intakes (number)
2019	7	0	39
2020	6	0	40

28. Estimated or actual linear feet or percentage and location of roadside shoulders and ditches stabilized, if applicable.

Roadside shoulders:
Roadside shoulders were stabilized as needed. Four Street shoulders were stabilized during reporting period: Silhavy Street (45%), Evans Avenue (30%), Burlington Beach Road (40%) & Froberg Road (25%).

Ditch/creek bank stabilization projects:
Ditch:

In 2019, no Ditch stabilization work was performed.
In 2020, ditch stabilization work was performed in two (2) locations:

- 400 North by Pepper Creek – 15 ft of ditch stabilization / 26.64 tons of stone & 3.6 tons of concrete were used.
- 500 North east of S.R. 49 – 10 ft of ditch stabilization / 17.28 tons of stone & 1.44 tons of concrete were used.

Stream Bank:

During the reporting period, two stretches of Beauty Creek were stabilized:

- In 2019, a stretch (approximately 346 ft) of Beauty Creek main branch was relocated. This stretch was heavily eroded and was very close to a residential house. The new creek was seeded and covered by erosion control blankets. Trees were planted.
- From late 2019 to early 2020, a stretch (approximately 1,200 ft) of the Upper Oakwood Branch of the Beauty Creek was stabilized. The heavily eroded stream bank was regraded, seeded and covered by erosion control blanket. Bushes were also planted on bank. The toe of the bank was armored by stones.

29. Number and location of storm water outfall areas remediated from scouring conditions, if applicable.

No storm water outfall areas were remediated from scouring conditions during this reporting period.

30. Number and location of deicing salt and sand storage areas covered or otherwise improved to minimize storm water exposure.

Salt is stored at both 1855 Joliet Road & 405 Don Hovey Drive. They are both covered domes. Sand is kept just at the 1855 Joliet location and it is a 3-wall outdoor storage area.

31. Estimated or actual amount, in tons, of salt and sand used for snow and ice control.

During the reporting period, approximately 3,500 tons of salt was used for snow and ice control. Sand was not used for this purpose in this time period.

32. Estimated or actual amount of material by weight collected from catch basin, trash rack, or other structural BMP cleaning.

A total of 129.85 Cubic yards of debris was collected from catch basins during reporting period. The data was also provided in PI #27.

Other structures, including storm lines, intake tops and ditch grates were cleaned as needed but the amount of materials removed was not tracked.

33. Estimated or actual amount of material by weight collected from street sweeping, if utilized.

For the reporting period, 153 tons of street sweepings were collected and disposed.

34. If applicable, number or percentage and location of canine parks sited at least one hundred fifty (150) feet away from a surface waterbody.

The City of Valparaiso has one canine park within the MS4 area, and it is within 150 feet from a surface waterbody, Silver Lake.

List of Appendices

Appendix A: Classroom Education and Outreach activities conducted by the partnership with RWRDPC

Porter County Recycling & Waste Reduction District
Classroom Education Outreach
Students

MS4 Community	2016	2017	2018	2019	2020	Totals
Chesterton	832	787	789	735	580	3,723
Hebron	482	527	415	459	231	2,114
Kouts	113	405	218	172	57	965
Lakes Conservancy and Valparaiso	165	80	302	218	83	848
Portage	2,657	1,783	1,903	1,750	683	8,776
Porter	357	340	491	521	150	1,859
Porter County	2,531	1,876	2,441	2,518	888	10,254
South Haven	902	908	696	418	146	3,070
Valparaiso	1,634	1,297	1,711	1,674	378	6,694
Total	9,673	8,003	8,966	8,465	3,196	38,303

The Porter County row includes unincorportated areas such as Wheeler, Ogden Dunes, Boone Grove, and parts of Chesterton. In 2020, the Covid-19 pandemic affected Education Outreach Program by limiting the programs that could be held in person. Virtual programs had to be made available. Of the 2020 programs held, 86% were held in person, while 14% were held virtually. Most of those in person events were held pre-Covid.

Appendix B

Compost Site Activity

Boone Grove, Valparaiso, and Portage

2016 through 2020

Year	Grass	Leaves - Loose	Brush	Mixed Yard Waste	Logs	Leaves - Compact	Christmas Trees	Other	Total Cubic Yards	Visitors
2016	2,539	4,935	45,641	3,695	954	16,471	147	1,206	75,587	26,188
2017	1,809	4,671	40,271	3,025	2,262	10,248	145	1,630	64,061	25,336
2018	2,105	5,309	41,387	2,650	2,039	12,729	143	1,895	68,257	24,728
2019	2,381	5,569	42,631	3,383	1,709	14,400	144	657	70,874	29,258
2020	2,105	5,469	45,193	3,287	2,283	15,764	143	1,463	75,707	34,431

*The items are measured by cubic yards. The Portage Compost Site was opened in 2019.
This table represents the compost sites managed by the District where the public has access.

Compost Site Activity

Boone Grove, Chesterton, Valparaiso, Portage

2016 through 2020

	Grass	Leaves - Loose	Brush	Mixed Yard Waste	Logs	Leaves - Compact	Christmas Trees	Other	Total Cubic Yards
2016	3,084	5,885	50,388	3,695	954	21,004	147	1,206	86,363
2017	2,059	5,401	45,884	3,025	2,262	15,420	145	1,630	75,826
2018	2,779	4,721	44,798	2,934	1,760	14,527	87	846	72,453
2019	2,836	6,499	50,584	3,383	1,709	19,328	144	657	85,139
2020	2,495	7,029	52,513	3,287	2,283	19,842	143	1,463	89,055

*The items are measured by cubic yard. The Portage Compost Site was opened in 2019.
This table represents all the compost sites managed by the District.

Appendix B

Porter County Recycling and Waste Reduction District
Compost Site Visitors

Boone Grove, Valparaiso, and Portage Public Access Sites

	South of Route 30	Kouts	Hebron	Valparaiso City Limits	Outside City Limits	Chesterton	Portage	South Haven	Dune Acres	Burns Harbor	Beverly Shores	Pines	Boone Grove	Wheeler	Ogden Dunes	Other (Out of County)	Businesses	Totals
Boone Grove	830	326	1,468	15	106	15	5	30					261	7		41	18	3,122
Valparaiso	5,846	246	279	6,521	4,968	1,341	445	1,422	17	51	32	4	18			79	337	21,606
2018 totals	**6,676**	**572**	**1,747**	**6,536**	**5,074**	**1,356**	**450**	**1,452**	**17**	**51**	**32**	**4**	**279**	**7**	**-**	**120**	**355**	**24,728**
Boone Grove	896	424	1,616	46	102	9	10	48					276	6		64	21	3,518
Valparaiso	6,761	261	255	7,650	5,783	1,657	403	1,405	31	67	46	9	32	189		79	474	25,102
Portage	1		1	10	16	142	361	24	4	26		4		1	38	10		638
2019 totals	**7,658**	**685**	**1,872**	**7,706**	**5,901**	**1,808**	**774**	**1,477**	**35**	**93**	**46**	**13**	**308**	**196**	**38**	**153**	**495**	**29,258**
Boone Grove	105	450	1,893	1,303	2	7	11	2					391	1		48	88	4,301
Valparaiso	752	219	177	25,422	256	1,107	331	80	7	20	27	7	10	181		6	415	29,017
Portage	1			75		180	704	21	42	37	26	4			23			1,113
2020 totals	**858**	**669**	**2,070**	**26,800**	**258**	**1,294**	**1,046**	**103**	**49**	**57**	**53**	**11**	**401**	**182**	**23**	**54**	**503**	**34,431**

*Due to Covid-19, in 2020, the District mainly tracked residents by the town of residence instead of their exact addresses. Therefore,the amounts for Valparaiso City Limits is much higher than previous years because it is including the numbers for residents from other categories such as South of Route 30.

Appendix B

Porter County Recycling & Waste Reduction District
Electronic Recycling Volumes
in pounds

	Compost - Valparaiso	Valparaiso	Porter	Compost - Boone Grove	Other	Portage	Annual Total
2016	220,618	96,366	52,815	27,623	57,547	176,281	631,250
2017	204,992	89,541	49,074	25,667	53,471	250,515	673,260
2018	224,549	98,083	53,756	28,116	58,572	126,465	589,541
2019	248,164	108,398	59,409	31,072	64,732	167,305	679,081
2020	412,296			35,832		111,775	559,903

In 2016 and 2017, electronics from Valparaiso, Porter, Compost-Boone Grove and Other, were direct hauled to the collection point at Compost-Valparaiso and sent on for processing from there. The 2016 and 2017 volumes are projections based on volumes recorded when electronics were picked up from those sites.

In 2020, the Covid -19 Pandemic changed the way data was being collected and the reported volumes are the pounds of material that were collected at each site location.

Appendix B

Porter County Hazardous Waste Collection
Historical Car Counts per Location

Year	Expo Center - 1	Portage - 1	Chesterton	Hebron	Kouts	Portage - 2	Expo Center - 2	Pines	Totals
2011	747	244	285						1,276
2012	795	487	426					323	2,031
2013	888	572	407					448	2,315
2014	740	907	412						2,059
2015	914	367	329	226		448	875		3,159
2016	380	344	266		210	294	412		1,906
2017	512	309	333	206		299	481		2,140
2018	489	366	392	n/a	179	356	541		2,323
2019	661	342	314	153	n/a	283	473		2,226
2020	469	Covid 19	365	n/a	112	covid 19	586		1,532

Appendix B

Porter County Hazardous Waste Collection
Historical Pounds per Location

Year	Expo Center - 1	Portage - 1	Chesterton	Hebron	Kouts	Portage - 2	Expo Center - 2	Pines	Extra Pickups	Totals
2011	45,744	12,788	14,067							72,599
2012	34,151	25,885	24,914					25,326		110,276
2013	73,354	44,787	29,486					30,785		178,412
2014	78,621	32,548	34,396							145,565
2015	61,031	38,833	32,913	15,557		41,379	62,060			251,773
2016	50,654	35,111	25,490		22,238	17,237	63,199			213,929
2017	42,131	25,356	19,646	17,473		21,488	34,386		4,530	165,009
2018	50,693	31,539	16,155		28,268	28,661	48,085		4,421	207,822
2019	51,599	19,267	17,137	12,132	-	11,968	33,663		12,315	158,081
2020	37,477	covid	18,128		12,303	covid	38,604		16,371	122,883

Appendix C: City of Valparaiso Storm Sewer Map as of Dec. 31st, 2020