

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
ANNUAL FACILITY INSPECTION REPORT
NPDES PERMIT FOR STORM WATER DISCHARGES
FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)**

Complete each section of this report.

REPORT PERIOD:	FROM: MARCH 2016	TO: MARCH 2017
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MS4 OPERATOR INFORMATION: (As it appears on the current permit)

NAME: Village of Buffalo Grove		TELEPHONE NUMBER: 847-459-2547
MAILING ADDRESS: 51 Raupp Boulevard		
CITY: Buffalo Grove	STATE: IL	ZIP: 60089
CONTACT PERSON: Michael J. Reynolds (Person responsible for Annual Report)		

NAME(S) OF GOVERNMENTAL ENTITY(IES) IN WHICH MS4 IS LOCATED: (As it appears on the current permit)

Cook County	Lake County

THE FOLLOWING ITEMS MUST BE ADDRESSED.

A. CHANGES TO BEST MANAGEMENT PRACTICES (check appropriate BMP change(s) and attach information regarding change(s) to BMP and measurable goals.)

1. Public Education and Outreach	<input type="checkbox"/>	4. Construction Site Runoff Control	<input type="checkbox"/>
2. Public Participation/Involvement	<input type="checkbox"/>	5. Post-Construction Runoff Control	<input type="checkbox"/>
3. Illicit Discharge Detection & Elimination	<input type="checkbox"/>	6. Pollution Prevention/Good Housekeeping	<input type="checkbox"/>

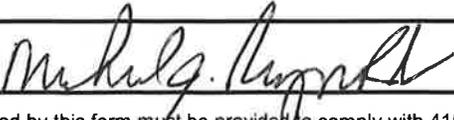
B.
Attach the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and your identified measurable goals for each of the minimum control measures.

C.
Attach results of information collected and analyzed, including monitoring data, if any during the reporting period.

D.
Attach a summary of the storm water activities you plan to undertake during the next reporting cycle (including an implementation schedule.)

E.
Attach notice that you are relying on another government entity to satisfy some of your permit obligations (if applicable).

F.
Attach a list of construction projects that your entity has paid for during the reporting period.

SIGNATURE: 	DATE: May 26, 2017
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Information required by this form must be provided to comply with 415 ILCS 5/39 (1996). Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

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Part A. Changes to Best Management Practices

Note: X indicates BMPs performed that were proposed in your NPDES permit
 ✓ indicates changes to BMPs proposed in your NPDES permit

Year 11	Year 12	Year 13	Year 14	Year 15	
MS4					
A. Public Education and Outreach					
X	X	X	X	X	A.1 Distributed Paper Material
			✓	✓	A.2 Speaking Engagement
X	X	X	X	X	A.3 Public Service Announcement
X	X	X	X	X	A.4 Community Event
					A.5 Classroom Education Material
X	X	X	X	X	A.6 Other Public Education
B. Public Participation/Involvement					
					B.1 Public Panel
X	X	X	X	X	B.2 Educational Volunteer
X	X	X	X	X	B.3 Stakeholder Meeting
					B.4 Public Hearing
					B.5 Volunteer Monitoring
X	X	X	X	X	B.6 Program Coordination
X	X	X	X	X	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination					
X	X	X	X	X	C.1 Storm Sewer Map Preparation
X	X	X	X	X	C.2 Regulatory Control Program
X	X	X	X	X	C.3 Detection/Elimination Prioritization Plan
X	X	X	X	X	C.4 Illicit Discharge Tracing Procedures
X	X	X	X	X	C.5 Illicit Source Removal Procedures
X	X	X	X	X	C.6 Program Evaluation and Assessment
X	X	X	X	X	C.7 Visual Dry Weather Screening
X	X	X	X	X	C.8 Pollutant Field Testing
					C.9 Public Notification
X	X	X	X	X	C.10 Other Illicit Discharge Controls

Year 11	Year 12	Year 13	Year 14	Year 15	
MS4					
D. Construction Site Runoff Control					
X	X	X	X	X	D.1 Regulatory Control Program
X	X	X	X	X	D.2 Erosion and Sediment Control BMPs
X	X	X	X	X	D.3 Other Waste Control Program
X	X	X	X	X	D.4 Site Plan Review Procedures
X	X	X	X	X	D.5 Public Information Handling Procedures
X	X	X	X	X	D.6 Site Inspection/Enforcement Procedures
					D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control					
X	X	X	X	X	E.1 Community Control Strategy
X	X	X	X	X	E.2 Regulatory Control Program
X	X	X	X	X	E.3 Long Term O&M Procedures
X	X	X	X	X	E.4 Pre-Const Review of BMP Designs
X	X	X	X	X	E.5 Site Inspections During Construction
X	X	X	X	X	E.6 Post-Construction Inspections
					E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping					
X	X	X	X	X	F.1 Employee Training Program
X	X	X	X	X	F.2 Inspection and Maintenance Program
X	X	X	X	X	F.3 Municipal Operations Storm Water Control
X	X	X	X	X	F.4 Municipal Operations Waste Disposal
X	X	X	X	X	F.5 Flood Management/Assess Guidelines
X	X	X	X	X	F.6 Other Municipal Operations Controls

Part B. Status of Compliance with Permit Conditions

(Provide the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable [MEP], and your identified measurable goals for each of the minimum control measures.)

The status of BMPs and measurable goals performed in Year 14 are described below.

1) PUBLIC EDUCATION AND OUTREACH

The Village performs a variety of activities that meet the requirements of the Public Education and Outreach minimum control measure. These activities include BMP A.1, A.3 and A.6. A brief description and status is provided below.

BMP No. A.1, A.3 – Distibuted Paper Material, Public Service Announcement

Brief Description of BMP: The Village newsletter has been used to provide information for the purposes of public outreach. The Village website provides additional links related to notifying residents of various collection events for leaves, landscape waste, tires, prescription drugs, holiday trees, and holiday lights. By promoting proper disposal of these items, the Village reduces the likelihood of illegal dumping into storm drains and drainage ways. The Village will continue to include a stormwater and/or ambient water quality related articles in the Village's newsletter at least once a year. The Village will continue to utilize other available outlets such as the Village website to reach residents regarding stormwater and water quality information.

BMP No. A.2 – Speaking Engagement

Brief Description of BMP: The Village regularly participates in or provides presentations to local civic clubs, watershed groups or other interested parties on topics related to NPDES, stormwater quality or other similar subjects. Speaking engagements provide the opportunity to inform concerned citizens or interested parties about stormwater quality, environmental impacts and other issues NPDES related issues and activities including ways to help. During Permit Year 14, the Village's Director of Public Works provided a chloride presentation to the Buffalo Creek Clean Water Partnership on responsible salt usage and ways to reduce chloride usage and impacts to the environment.

BMP No. A.6 – Other Public Education

Brief Description of BMP: The Village has information on its website relating to recycling of waste, waste disposal, stormwater and/or water quality and provides contact information for residents to report any potential stormwater or water quality related issues. The Village also has a website link on the Village's website to include information on the potential effects on storm water discharge due to climate change. The Village also held a Public Works Day/Open House where residents have the opportunity to learn about the functions of

the Public Works Department including stormwater quality activities. This year's demonstrations included a mock drain set up to inform residents on the importance of the "only stormwater down the drain" concept and the distribution of educational materials.

2) PUBLIC PARTICIPATION AND INVOLVEMENT

The Village performs a variety of activities that meet the requirements of the Public Participation and Involvement minimum control measure. These activities include BMP B.2, B.3, B.6, and B.7. A brief description and status is provided below.

BMP No. B.2 – Educational Volunteer

Brief Description of BMP: The Village participates and coordinates with the Des Plaines River Watershed Workgroup (DRWW), the Municipal Advisory Committee (MAC) of the Lake County Stormwater Management Commission, the Lower Des Plaines Watershed Planning Council and Buffalo Creek Clean Water Partnership (BCCWP). The goal of the work groups is to identify best management practices that are most appropriate and cost effective for the region to be used by municipalities and includes an element for chloride reduction.

BMP No. B.3 – Stakeholder Meeting

Brief Description of BMP: The Village will hold an annual public meeting to discuss topics including steps the public can take to reduce pollutants to stormwater runoff or the impacts of stormwater runoff on local water bodies. The goal is to increase public education and involvement regarding the Village's stormwater management and NDPEs program and their knowledge on ways they can help.

BMP No. B.4 – Public Hearing

Brief Description of BMP: The Village supports the Buffalo Creek Clean Water Partnership whose activities reduce the amount of pollutants and other materials that make it to the MS4. The Village regularly participates in volunteering activities that provide opportunities to interact with residents and educate them on the importance of stormwater and water quality. Village staff will continue to perform these activities and work to increase participation from its staff and attendance by residents.

BMP No. B.6 – Program Involvement

Brief Description of BMP: The Village coordinates with local groups to perform clean up activities. These activities directly reduce the amount of pollutants entering the Village's storm sewer system.

The Village supports the Buffalo Creek Clean Water Partnership whose activities reduce the amount of pollutants and other materials that make it to the MS4. The Village regularly participates in volunteering activities that provide opportunities to interact with residents and educate them on the importance of stormwater and water quality. Village staff will continue

to perform these activities and work to increase participation from its staff and attendance by residents.

BMP No. B.7 – Other Public Involvement

Brief Description of BMP: The Public Works Department provides contact information on the Village website to allow residents to report stormwater or water quality related issues.

Buffalo Grove has actively participated in the Des Plaines River Watershed Workgroup (DRWW). DRWW is a dues paying organization with a mission to bring together a diverse coalition of stakeholders to work together to improve water quality in the Des Plaines River and its tributaries in a cost effective manner to meet Illinois EPA requirements. The DRWW will monitor water quality in the river and tributaries, prioritize and implement water quality improvement projects, and secure grant funding to offset the cost. This committee has worked to reduce pollution in the Des Plaines River Watershed.

Buffalo Grove has actively participated in the Municipal Advisory Committee (MAC) of the Lake County Stormwater Management Commission. This committee has worked to reduce pollution in waterways and water bodies in Lake County.

The Village also held a Public Works Day/Open House where residents have the opportunity to learn about the functions of the Public Works Department including stormwater quality activities. This year's demonstrations included a mock drain set up to inform residents on the importance of the "only stormwater down the drain" concept and the distribution of educational materials.

3) ILLICIT DISCHARGE DETECTION AND ELIMINATION

The Village performs a variety of activities that meet the requirements of the Illicit Discharge Detection and Elimination minimum control measure. These activities include BMP's C.1, C.2, C.3, C.4, and C.7. A brief description and status is provided below.

BMP No. C.1 – Storm Sewer Map Preparation

Brief Description of BMP: The Village maintains an updated storm sewer system map. The map shows the location all of the outfalls within the Village and identifies the name of all waters that receive discharges from those outfalls. The map is currently up-to-date and will be updated as needed based on development and other stormwater improvements.

BMP No. C.2 – Regulatory Control Program and C.3 Detection/Elimination Prioritization Plan

Brief Description of BMP: The Village has established a high quality suburban environment through adoption and enforcement of building and other codes which provide for polluted discharges to be properly routed to the sanitary sewer system for treatment. The Villages' Municipal Code prohibits improper discharges and Village staff effectively follow

up any observation of improper discharges of pollutants. The Village will continue to enforce the ordinance to prevent or eliminate non-stormwater discharges from the municipal separate storm sewer system.

BMP No. C.4 – Illicit Discharge Tracing Procedures and C.5 Illicit Source Removal

Brief Description of BMP: The Village has existing policies and procedures in place to trace and eliminate illicit discharges to the municipal separate storm sewer system identified by resident reporting, visual screening, and public works maintenance activities. These procedures include the utilization of the storm sewer map, existing design plans and other available data to locate the source of potential pollutants. The Village will continue these tracing activities as needed to reduce or eliminate non-stormwater discharges to the MS4.

BMP No. C.6 – Program Evaluation and Assessment

Brief Description of BMP: The Village performs an annual review of the effectiveness of the regulatory program. The Village also performs screenings of all Village outfalls to identify illicit discharges as part of its maintenance activities. The Village will continue to perform these activities.

BMP No. C.7 – Visual Dry Weather Screening

Brief Description of BMP: The Village perform inspections of all MS4 outfalls during dry weather conditions or as determined by the inspection prioritization plan.

BMP No. C.8 – Pollutant Field Testing

Brief Description of BMP: The Village regularly samples, test and documents the results of influent and effluent flow to various lakes and streams throughout the community.

BMP No. C.10 – Other Illicit Discharge Controls

Brief Description of BMP: The Village performs annual monitoring of the receiving waters as required by the ILR40 permit conditions.

A segment of Buffalo Creek (GST) is in an approved TMDL water quality plan (Des Plaines River/Higgins Creek Watershed TMDL Report, dated May 2013).

A segment of the Des Plaines River (G-36) is identified on the IEPAs 303d list as impaired for primary recreational contact (fecal coliform), aquatic life (total phosphorus) and fish consumption (mercury and PCBs). No TMDL has been identified for this segment of the Des Plaines River in the Village.

A segment of Indian Creek (GU-02) is identified on the IEPAs 303d list as impaired for aquatic life (DO). No TMDL has been identified for this segment of Indian Creek in the Village.

The Village will monitor the progress of watershed work groups and the establishment of any applicable TMDLs or other Watershed Management Plans. The Village will continue the monitoring and evaluation program.

4) CONSTRUCTION SITE RUNOFF CONTROL

The Village has ordinances and activities in place that meet the requirements of the Construction Site Runoff Control minimum control measure. These activities include BMP's D.1, D.2, D.3, D.4, D.5, and D.6. A brief description and status is provided below.

BMP No. D.1 – Regulatory Control Program

Brief Description of BMP: The Village has ordinances in place to require the review, inspection and enforcement of construction site runoff controls. The Village will continue with these policies/procedures and update as needed based on the impending MS4 permit.

BMP No. D.2 – Erosion and Sediment Control BMPs and D.3 Other Waste Control Program

Brief Description of BMP: The Village has ordinances in place to require the review, inspection and enforcement of soil erosion and sediment control best management practices. The Village will continue these procedures to reduce or prevent the discharge of soil and other potential pollutants from construction sites and amend as needed based on the impending permit. Other wastes which would leave the site, such as littering are also prohibited.

BMP No. D.4 – Site Plan Review Procedures

Brief Description of BMP: The Village has procedures that require the review of site plan for proposed developments for compliance. The Village will continue the review procedures for developments to verify compliance with applicable NDPES regulations.

BMP No. D.5 – Public Information Handling Procedures

Brief Description of BMP: The Village has procedures in place to receive, log and address publicly reported issues. The Village will continue these procedures and respond and/or investigate as needed.

BMP No. D.6 – Site Inspection/Enforcement Procedures

Brief Description of BMP: The Village and County regulatory control programs all for the inspection and enforcement for construction site runoff control. The Village will continue the inspection and enforcement program to prevent the discharge of pollutants from construction sites.

5) POST-CONSTRUCTION RUNOFF CONTROL

The Village has ordinances and activities in place that meet the requirements of the Post-Construction Runoff Control minimum control measure. These activities include BMP's E.2, E.3, E.4, and E.5. A brief description and status is provided below.

BMP No. E.1 – Community Control Strategy and E.2 – Regulatory Control Program

Brief Description of BMP: The Village has ordinances in place that require the review, inspection and enforcement of post-construction runoff control measures. The Village will continue to enforce the ordinances and verify compliance of all developments following construction to reduce or prevent the discharge of pollutants to the MS4.

BMP No. E.3 – Long Term O&M Procedures

Brief Description of BMP: The Village has procedures for assisting and evaluating long term maintenance of stormwater best management practices. The Village will continue to assist developers, residents and other target audiences by providing sample maintenance plans and conducting inspections as needed.

BMP No. E.4 – Pre-Construction Review of BMP Designs

Brief Description of BMP: The Village's existing practices include the pre-construction review of BMP designs. These procedures include pre-application meetings for large scale developments. The Village will continue the review procedures and modify as necessary to maintain compliance.

BMP No. E.5 – Site Inspections During Construction

Brief Description of BMP: The Village performs site inspections during and after construction at new development and redevelopment projects to verify compliance with the runoff control requirements. The Village will continue these procedures aimed at preventing the discharge of pollutants to the MS4.

BMP No. E.5 – Site Inspections During Construction

Brief Description of BMP: The Village, Lake County and MWRDGC have ordinances and procedures in place that protect water quality and reduce the discharge of pollutants by controlling construction site runoff. These procedures include review of the BMP designs by qualified staff and inspection/enforcement during and after construction.

BMP No. E.6 – Post-Construction Inspections

Brief Description of BMP: The Village, Lake County and MWRDGC have ordinances and procedures in place that protect water quality and reduce the discharge of pollutants by controlling post-construction site runoff. These procedures include review of the BMP designs by qualified staff and inspection/enforcement during and after construction.

6) POLLUTION PREVENTION AND GOOD HOUSEKEEPING

The Village performs a number of activities that meet the requirements of the Pollution Control and Good Housekeeping minimum control measure. These activities include BMP's F.1, F.2 and F.4. A brief description and status is provided below.

BMP No. F.1 – Employee Training Program

Brief Description of BMP: The Village conducts annual stormwater pollution prevention training for Village employees to reduce or eliminate the discharge of pollutants from Village owned facilities to the storm sewer system. The Village staff also includes trained and licensed pesticide applicators.

BMP No. F.2 - Inspection and Maintenance Program

Brief Description of BMP: The Village has an inspection and maintenance program in place to evaluate and maintain the municipal stormwater facilities. Additional activities include Village street sweeping program, 4-6 times per year. The Village will continue this program aimed at reducing the amount of debris and other potential pollutants entering the municipal separate storm sewer system.

BMP No. F.3 – Municipal Operations Storm Water Control and F.4 – Municipal Operations Waste Disposal

Brief Description of BMP: The Village has procedures and policies to prevent the discharge of pollutants to the MS4 from municipal operations. These policies include dewatering procedures, pumping activities and waste disposal. The Village has performed the annual evaluation of the Village's Pollution Prevention Plan and will continue these operations and re-evaluate and/or modify as needed to prevent the discharge of pollutants to the MS4.

The Village also has a comprehensive Spill Prevention, Control and Countermeasure (SPCC) Plan for the Public Works facility to reduce the potential impacts to the environment. Specifically the SPCC plan details operating procedures that prevent spills and/or discharges, control measures installed to prevent spills from reaching the environment, and countermeasures to contain, clean up, and mitigate a spill or discharge that reaches the environment.

BMP No. F.5 - Flood Management/Assess Guidelines

Brief Description of BMP: The Village, Lake County and MWRDGC ordinances require the appropriate management of development and other uses within special flood hazard areas.

BMP No. F.6 - Inspection and Maintenance Program

Brief Description of BMP: The Village performs a variety of activities that reduce or prevent pollutants including pesticides, herbicides, fertilizers and trash from entering the storm sewer system and to minimize exposure. These activities are part of the Villages municipal operations controls and include proper storage and handling, certification, spill and leak prevention, and response procedures, street sweeping and waste recycling.

Part C. Information and Data Collection Results

(Provide information and water quality sampling/monitoring data related to illicit discharge detection and elimination collected during the reporting period.)

See attached 2016 Water Quality Monitoring Results for NPDES Phase II Permit Requirements, Buffalo Grove, Lake & Cook Counties, Illinois.

MEMORANDUM

DATE: March 1, 2017

TO: Darren Monico/Mike Reynolds, Village of Buffalo Grove, Public Works

CC: Darren Olson, PE, CBBEL
Travis Parry, PE, CBBEL

FROM: Eric Japsen, CBBEL 

SUBJECT: 2016 Water Quality Monitoring Results for NPDES Phase II Permit Requirements, Buffalo Grove, Lake & Cook Counties, Illinois (CBBEL Project No. 160078)

Water quality monitoring was completed for the Village of Buffalo Grove (Village) to address Illinois Environmental Protection Agency (IEPA) National Pollutant Discharge Elimination System (NPDES) Phase II requirements for their Municipal Separate Storm Sewer (MS4) Permit No. ILR400303. In 2017, water sampling for some pollutants was added for similarity to recent water sampling results collected by the Buffalo Creek Clean Water Partnership (BCCWP), and to address the evolving total maximum daily load (TMDL) requirements. A location map and a photo exhibit of the sampling sites are attached in Appendix 1. Water testing laboratory results and summary spreadsheets are attached in Appendix 2. Recommendations for 2017 are listed at the end of this document.

Background

The NPDES permit for MS4 communities specifies that discharges shall not cause or contribute to a violation of state water quality standards (35 IAC 302). Compliance with state water quality standards is mandatory for MS4 facilities. The NPDES permit states that when a TMDL is approved for a waterbody, MS4s must attempt to comply with Waste Load Allocations (WLAs) for those pollutants having TMDLs.

A TMDL is the sum (plus a safety factor) of the allowable amounts of a single pollutant that a waterbody can receive from all contributing sources and still meet water quality standards or designated uses. The establishment of the TMDL sets pollution reduction goals to improve the quality of impaired waters. WLAs were allocated for each discharger based on the size of the MS4 and percent area within the Des Plaines River watershed. The BCCWP includes MS4s in its watershed wide attempt to meet water quality standards through TMDLs.

TMDLs for pollutants within the impaired reach of Buffalo Creek (IL_GST), which lies within Village limits, were approved by IEPA for fecal coliform, chloride, and dissolved oxygen (DO) in August 2013. Recent TMDL updates included TMDL development for total suspended solids (TSS) for Buffalo Creek in 2014, and prioritizing TMDL development for DO in Indian Creek (IL_GU-02) in 2016. The Village of Buffalo Creek is an active member of the BCCWP (<http://www.buffalocreekcleanwater.org/>), which developed the IEPA approved Buffalo Creek Watershed Plan, dated December 2015.



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Historical and recent water quality data from the Metropolitan Water Reclamation District of Greater Chicago (MWRD) Site WW-12 was used to develop TMDL waste load allocations for the impaired Buffalo Creek IL_GST for fecal coliform, chloride, and DO. Recently, the IEPA determined that carbonaceous biological oxygen demand (CBOD) and ammonia are the two pollutants that must be controlled in order to improve DO levels in Buffalo Creek. MWRD Site WW-12 is located on Buffalo Creek near the downstream limits of the Village, approximately 500 feet south of Lake Cook Road. MWRD results collected from Buffalo Creek during portions of the period of 1977-2009 and on five dates in 2015 are presented along with eight years of sampling results, 2009-2016, in Appendix 2.

The USGS stream gauge at Wheeling is close to sampling Site BC-2 located south of the Village's south boundary with Wheeling. The USGS stream gauge is located at north Latitude 42°09'07" & west Longitude 87°57'28", south of Lake Cook Road and approximately 50 feet north of Aptakisic Road (note that Aptakisic Road in this location is an ±800' long stub between IL Route 83 and Wieland Road). Stream gauge information was used to correlate water quality sampling with IEPA approved TMDL flow regimes for pollutants causing impairments.

The 2016 303(d) listing for DO in the impaired reach of Indian Creek, Segment IL_GU-02, includes the portion of Indian Creek that occurs within Village limits. Aptakisic Creek and Kildeer Creek Tributary are not on the State's 303(d) list.

Methods

On October 27, 2016, eight water samples were collected from creeks/tributaries located near upstream and downstream Village boundaries to describe its MS4 discharge for the 2016 NPDES monitoring/reporting period. The eight samples were collected in the same locations as previous years' sampling to maintain consistency for comparison of results. Sampling sites numbered 1 (below) are located at upstream Village limits; sites numbered 2 are located at downstream Village limits. The eight sampling sites listed below are shown on the Village map in Appendix 1:

Aptakisic Creek
AC-1 & AC-2

Indian Creek
IC-1 & IC-2

Kildeer Creek Tributary
KCT-1 & KCT-2

Buffalo Creek
BC-1 & BC-2

Recent IEPA sampling guidelines recommends that water samples be collected within 24 hours of a rain totaling at least 0.25 inch. On October 26, 2016, rain totaling 1.46 inch was recorded at nearby Chicago Executive Airport in Northbrook, Illinois. Therefore, we collected water samples on October 27, 2016.

Laboratory tests and field observations provide a general description of water quality at the eight sample sites, as well as pollutants that impair water quality. CBBEL collected grab



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samples in designated bottles and placed them on ice for laboratory testing. Laboratory water testing was completed by our sub-contractor, Prairie Analytical Systems, Inc., Springfield, Illinois, under standard chain-of-custody procedures. Laboratory test results were reported in terms of reporting limits or method detection limits (Appendix 2). Field observations were recorded using an Oakton 300 Series probe and an Oakton ECTestr at the time of sample collection at each site.

For 2016, all eight sites were sampled for nine potential pollutants, while the Buffalo Creek sites (Sites BC-1 & BC-2) and Indian Creek sites (Sites IC-1 & IC-2) were also sampled for carbonaceous biochemical oxygen demand (CBOD) and ammonia nitrogen. This testing schedule follows recent IEPA guidelines that associate CBOD and ammonia with the DO impairments within Buffalo Creek Segment IL_GST (2013 TMDL Report) and Indian Creek Segment (IL_GU-02) (2016 Illinois Integrated Water Quality Report). Thus, the 2016 water sampling list for the four streams consisted of the following:

Laboratory Tests

Fecal Coliform
Chloride
Total Suspended Solids (TSS)
Total Phosphorous (TP)
Nitrate Nitrogen
Nitrite Nitrogen
Total Kjeldahl Nitrogen
Total Nitrogen (TN)
Oil & Grease
CBOD (only Sites BC-1 & 2 and IC-1 & 2)
Ammonia (only Sites BC-1 & 2 and IC-1 & 2)

Field Observations

Dissolved Oxygen (DO)
pH
Conductivity
Temperature

Results and Discussion

Stream water levels were approximately 8 inches to 12 inches above base flow conditions at the BC-1 & 2, IC-1 & 2, KCT-1 & 2, and AC-1 & 2 sites, with strong flows at all but the AC-1 upstream site. Water clarity was murky at all sites except AC-1, which was clear. High water levels, strong flows, and murkiness was due to the heavy rain, runoff, and bank erosion/sedimentation. At the time of the 9:00 am sampling on October 27, 2016, the USGS stream gauge on Buffalo Creek at Wheeling reported a mean flow rate of 80 cubic feet per second and a stream gage height of 2.80 feet. For comparison, on March 7, 2016 (the 2015 sampling date), the USGS stream gauge on Buffalo Creek at Wheeling reported a mean flow rate of 14 cubic feet per second (snowmelt), and on August 28, 2014 (the 2014 sampling date), the USGS stream gauge on Buffalo Creek at Wheeling reported a mean flow rate of 23 cubic feet per second within a day following rain.

Results obtained from water sampling at the eight sites for the past five years 2012-2016 are listed along with State water quality standards and other measures for some constituents not having standards, as sourced from the 2015 Buffalo Creek Watershed Plan. Monthly water quality testing results May through September 2015 and historic



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results for Buffalo Creek by the MWRD are also provided for some constituents. See Appendix 2 for spreadsheets.

Results from the sampling points at the upstream Village limits (Sites AC-1, BC-1, IC-1 and KCT-1) may be considered the background levels. This provides a basis of reference for which the water quality results at the downstream Village limits can be compared (Table 1, below). The Village should note when (Appendix 2):

- 1) Sampling results exceed state water quality standards;
- 2) Sampling results at the downstream Village limits (sites numbered 2) exceed those at the upstream limits (sites numbered 1).

Laboratory Test Results

Most of the October 27, 2016 water sample results were similar to results obtained on sampling dates in previous years. However, fecal coliform and TSS results contrasted sharply to previous years' results at most sites, as might be expected when comparing 2016 results following nearly 1.5 inches of rain to 2014 and 2015 samples following lighter rain and snowmelt. Some 2016 results contrasted sharply to August samples of previous years that were collected in dry weather conditions, prior to the guidance recommending sampling after rain events (Appendix 2).

Discussion is presented below for water testing results of pollutants having TMDLs, for results that did not meet state water quality standards, for those exceeding typical ranges, and for those differing substantially from previous sampling results. Typical results, intermediate results, or those meeting state standards are not discussed at length.

Fecal Coliform

The 2016 fecal coliform levels were very high ($\geq 2,000$ colonies per 100 milliliters) at six sampling sites, and very low (< 10 colonies/100ml at two sites (downstream Sites IC-2 and AC-2). Inexplicably, Site IC-1 had the highest fecal level yet observed (5,300 colonies/100ml), while site IC-2, located approximately 2,200 feet downstream, had a very low result (< 10 colonies/100ml). Fecal coliform results for six sampling sites were exponentially higher than the 2015 results for those sites and were the highest observed over the past five years (range 2,000 colonies/100ml to 5,300 colonies/100ml). However, these levels were much lower than the highest result recorded at WW-12 by MWRD on August 3, 2015 (11,000 colonies/100ml), and far lower than the highest MWRD result of 28,000 colonies/100ml observed at WW-12 on one date during 2000-2009 sampling.

As in the previous years' sampling, the 2016 samples were collected on only one sampling date in order to compare to previous years' testing results and to address the annual MS4 water quality monitoring requirement. A minimum of 5 sampling results averaged over a maximum five-year period is required to evaluate the fecal coliform standards. When averaging fecal results over five years, all of the eight sites exceeded the WQS maximum of 200 colonies/100ml.



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On October 27, 2016, although two of the downstream sites exceeded the 200 colonies/100ml standard, none of the fecal coliform results were higher at downstream than upstream sites. The mean of the most recent five samples for Buffalo Creek Sites BC-1 & 2 from our sampling results (over five years) and from MWRD results (over June-October 2015) are listed in Table 1 below.

Table 1. The Most Recent Five Sample Means of Fecal Coliform Samples, CBBEL Annual Testing & MWRD Monthly Testing, within Buffalo Creek, IL GST, Buffalo Grove, Illinois

Sampling Site	Mean* colonies/100ml, 2012-2016	Mean* colonies/100ml, 2011-2015	MWRD 2015 Mean colonies/100ml**
BC-1	548	116	-
BC-2	862	496	-
WW-12	-	-	2,514

*CBBEL sampling frequency once annually; **MWRD sampling frequency monthly June-October 2015.

Because Sites BC-1 & BC-2 both had five sample means exceeding 200 colonies/100ml and had at least 1 exceedance of the 400 colonies/100ml standard over the five-year period 2012-2016, our results indicate Not Supporting Primary Contact Use (poor water quality) caused by fecal coliform in Buffalo Creek. At MWRD Site WW-12 located near Site BC-2, the monthly 2015 sampling results indicate Not Supporting Primary Contact Use (poor water quality) for fecal coliform because exceedances of 400 colonies/100ml were observed on two of five dates (40%) and the mean of the five samples was 2,514 colonies/100ml.

Fecal coliform levels in water bodies vary on an hourly, daily, and seasonal basis, and in response to rain and runoff events, and include natural sources such as wildlife, domestic animal, human, and cultural inputs. Wildlife (ducks, geese, mammals, etc.) and domestic animals were observed in and along streams and in golf course and park areas. Surface runoff from the previous day's rain likely contained feces. These and other non-point sources contribute to the higher fecal coliform results.

TMDL waste load allocations for fecal coliform were approved within Buffalo Creek Segment IL GST for five stream flow conditions (High, Moist, Mid-Range, Dry, and Low) flows. The Village must evaluate these results in terms of the WLAs for its MS4 discharges. Higher fecal coliform levels are expected under High and Moist flow conditions (2013 TMDL Report). For Buffalo Creek, the flow observed on October 27, 2016 should be considered the High Flow condition, which the WLA is higher than for Dry, Low, Mid-range, and Moist flow conditions.

Based on the sample results at Sites BC-1 & BC-2, the TMDL was exceeded. Note, however, that the samples were collected at a single point in time, and may or may not be representative of the fecal coliform levels that occurred, and likely fluctuated, throughout the day at each site. Thus, we caution the interpretation of a single instantaneous sample result as the basis for determining TMDL exceedance.



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Chloride

The 2016 chloride results for all eight sites CBEL sampled did not exceed the state maximum Water Quality Standard (WQS) of 500 mg/L. The chloride levels ranged from 119 mg/L at Site IC-1 to 176 mg/L at Site BC-1. The October 27, 2016 sampling date is likely six months after the last use of road de-icer in Spring and before its use again in Fall-Winter 2016.; therefore, the October 27, 2016 test results were low as expected.

IEPA has identified the Winter months as being the critical condition when de-icing salts, many of which contain chloride, are present in runoff to streams.

Ammonia Nitrogen

Ammonia nitrogen sampling was limited to Sites BC-1, BC-2, IC-1 & IC-2 in 2016 because Buffalo Creek IL_GST has a TMDL for DO and a TMDL is being developed for Indian Creek IL_GU-02 for DO. The IEPA cited ammonia as a pollutant of concern because it contributes to low DO in Buffalo Creek (Integrated Report-2012). The 2016 ammonia levels were 0.121 mg/L at Site IC-1, 0.122 mg/L at Site IC-2, 0.209 mg/L at Site BC-1, and 0.243 mg/L at Site BC-2. These levels were much lower than the state WQS maximum of 15 mg/L.

A TMDL waste load allocation of 0.70 lb./day within IL_GST was approved for Buffalo Grove by IEPA. The decrease from the upstream to downstream Buffalo Creek sites indicate that the Village was within its WLA. Although a TMDL (i.e. WLA) is not yet developed for ammonia in Indian Creek, we assume that that the small increase (0.001 mg/L) from the upstream to downstream Indian Creek sites would not likely exceed a WLA. The critical condition for ammonia is during the Summer when decomposition and other oxygen consuming processes are occurring.

Carbonaceous Biochemical Oxygen Demand (CBOD)

CBOD sampling was limited to Sites BC-1 & 2 and IC-1 & IC-2 in 2016. The IEPA listed CBOD as a pollutant of concern for Buffalo Creek in the Integrated Report-2012 because high CBOD levels contribute to low DO levels. The 2016 CBOD levels were 4.53 mg/L at Site BC-1 and 3.30 mg/L at BC-2, and 4.23 at Site IC-1 and 4.35 at IC-2. Note that there is no General Use water quality standard for CBOD; all CBOD results were lower than the 8.0 mg/l standard that applies to wastewater effluent. At the time of sampling, because a lower CBOD level was found at the downstream site, no CBOD pollutant was discharged by the Village into Buffalo Creek, so the Village was within its WLA for IL-GST. A TMDL for CBOD has not yet been developed; therefore, a WLA was not yet applicable.

CBOD is listed as a conventional pollutant in the U.S. Clean Water Act. BOD is a composite term that describes the consumption of oxygen through the oxidation of carbon and nitrogen by bacteria in the water. The sources of nutrients and BOD include both point and nonpoint. The critical condition for CBOD is during the Summer when decomposition and other oxygen consuming processes are occurring.

Total Suspended Solids (TSS)

There is no General Use water quality standard for TSS. Therefore, the test results that ranged from 3.5 mg/L at Site AC-1 to 45.0 mg/L at Site KCT-1 were not exceedances of a



MEMORANDUM

State standard. But, in following results presented in the Buffalo Creek Watershed Plan, and in attempting to meaningfully compare 2016 TSS results, a range of 15-30 mg/L for wastewater effluent is provided. Three sites (Site KCT-1, 45.0 mg/L; Site KCT-2, 36.5 mg/L; and Site BC-2, 33.0 mg/L) exceeded this range for effluent. It is understandable that TSS levels were high following the 1.46 inch of rain and subsequent runoff one day previous to sampling. At seven of the eight stream sites, water was murky brown due to high stream flows causing erosion/sedimentation. We are unaware if the WLA has been approved; thus, a TMDL was not yet applicable.

Field Test Results

Dissolved Oxygen (DO)

On October 27, 2016, none of the sampling sites' results exceeded the state minimum WQS of 3.5 mg/L (applicable August through February). Our field testing results ranged from 5.61 mg/L at Site AC-1 to 6.96 mg/L at Sites IC-2 and KCT-2. The most recent DO exceedances we found were at three sites with results <3.5 mg/L during August 21, 2013 sampling. At this time, we understand that for Indian Creek IL_GU-02, TMDLs for ammonia and CBOD have not been developed; therefore, a WLA was not yet applicable.

pH

The 2016 pH results for all eight sites were within the state WQS range of 6.5-9.0. The pH levels ranged from 7.64 at Site BC-1 to 8.29 at Site AC-2. Of all our sample results 2009-2016, only one exceedance was observed at Site BC-1 on August 31, 2012 (9.08 mg/L). The MWRD 2015 pH results were also within the WQS range.

Conductivity

The October 2, 2016 field test results for conductivity levels at all eight sites were lower or intermediate to previous results spanning the 2012-2015 period. The 2016 results ranged from 780 microsiemens (*ms* or *umhos*) at Site IC-1 to 960 *ms* at Sites KCT-1, KCT-2, & AC-2, and are within the 50-1,500 *ms* range provided as the standard in the Buffalo Creek Watershed Plan (Volunteer Stream Monitoring Manual, USEPA, 1997). Conductivity is a measure of electrically charged particles in water, such as salt, clay/soil, and bio-chemical, and other dissolved matter that tend to be high during Winter or high flow, turbid stream conditions.

Temperature

On October 27, 2016, water temperature readings for all sites were lower than the state maximum WQS of 32.0 degrees Celsius for April through November. Stream temperatures ranged from 10.5 to 11.6 degrees Celsius.

Storm Water Controls

The Village of Buffalo Grove continues to comply with MS4 NPDES requirements and implement the six minimum control measures to reduce pollutants in streams occurring within its municipal boundaries. The Village has several Best Management Practice (BMP) projects for streams underway, and is active in the Buffalo Creek Clean Water Partnership (BCCWP).



MEMORANDUM

Recommendations for 2017

Based on these 2016 water quality results, TMDLs for Buffalo Creek IL_GST, the TMDL being developed for Indian Creek IL_GU-02 for dissolved oxygen (CBOD & ammonia), the renewed General NPDES Permit No. ILR40 effective March 1, 2016, and continued compliance with MS4 Permit No. ILR400303, we recommend the following for 2017:

- 1) Continue to participate in the Buffalo Creek Clean Water Partnership, which we understand covers the Village's water sampling requirements for Buffalo Creek. Optionally, complete once or twice annual laboratory water quality testing, within 24 hours of a rain event totaling at least 0.25 inches, for pollutants in accordance with the format of the Buffalo Creek Watershed Report.
- 2) Optionally, complete water quality laboratory testing at the Indian Creek sites for CBOD, ammonia, and field sampling for DO, pH, conductivity, and temperature.
- 3) Optionally, sample all eight sampling sites within the four streams located within Village limits for fecal coliform, chloride, total suspended solids, total nitrogen, total phosphorous, and oil and grease, and field test for DO, pH, conductivity, and temperature.
- 4) Continue to address the six minimum control measures in order to reduce pollutants to the maximum extent practicable (MEP), implementing BMPs that include:
 - A. Public education and outreach
 - B. Public participation/involvement
 - C. Illicit discharge detection and elimination
 - D. Construction site runoff control
 - E. Post-construction runoff control
 - F. Pollution prevention/good housekeeping
- 5) Continue to pursue and implement water quality improvement projects, stream restoration/maintenance, and cost-share opportunities for each of the four streams within Village limits contributing to the Des Plaines River watershed.
- 6) Continue to address NPDES requirements including annual reports.

References

Illinois Environmental Protection Agency, Division of Water Pollution Control. February 10, 2016. General NPDES Permit No. ILR40. National Pollutant Discharge Elimination System General NPDES Permit for Discharges from Small Municipal Separate Storm Water Systems. 19pp.

<http://www.epa.illinois.gov/topics/forms/water-permits/storm-water/ms4/index>



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Illinois Environmental Protection Agency, Bureau of Water. July 2016. Illinois Integrated Water Quality Report and Section 303(d) List, 2016, Clean Water Act Sections 303(d), 305(b) and 314, Water Resource Assessment Information and List of Impaired Waters Volume I: Surface Water.

<http://www.epa.illinois.gov/Assets/iepa/water-quality/watershed-management/tmdls/2016/303-d-list/iwq-report-surface-water.pdf>

Illinois Environmental Protection Agency, Bureau of Water. February 2016. Illinois Integrated Water Quality Report and Section 303(d) List, 2016, Clean Water Act Sections 303(d), 305(b) and 314, Water Resource Assessment Information and List of Impaired Waters, Volume I: Surface Water.

<http://www.epa.illinois.gov/Assets/iepa/water-quality/watershed-management/tmdls/2016/303-d-list/iwq-report-surface-water.pdf>

Illinois Environmental Protection Agency, Bureau of Water (Final). March 2014. Illinois Integrated Water Quality Report and Section 303(d) List-2014, Clean Water Act Sections 303(d), 305(b) and 314, Water Resource Assessment Information and Listing of Impaired Waters, Volume I: Surface Water

<http://www.epa.state.il.us/water/tmdl/303-appendix/2014/iwq-report-surface-water.pdf>.

Illinois EPA. August 2013. Decision Document for the Approval of the Des Plaines River / Higgins Creek Watershed, IL, TMDL. <http://www.epa.state.il.us/water/tmdl/report/desplains-higgins-creek/final-decision.pdf>

AECOM, Inc., for the Illinois Environmental Protection Agency. May 2013. Des Plaines River / Higgins Creek Watershed TMDL Report, IEPA/BOW/12-003

<http://www.epa.state.il.us/water/tmdl/report/desplains-higgins-creek/final-tmdl-report.pdf>

Illinois Pollution Control Board. 2014. 35 IL. Adm. Code Part 302, IL Water Quality Standards, <http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp>.

Weather Underground, 2016, for Buffalo Grove as recorded at nearby Chicago Executive Airport in Northbrook, Illinois. <http://www.wunderground.com>.

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MEMORANDUM

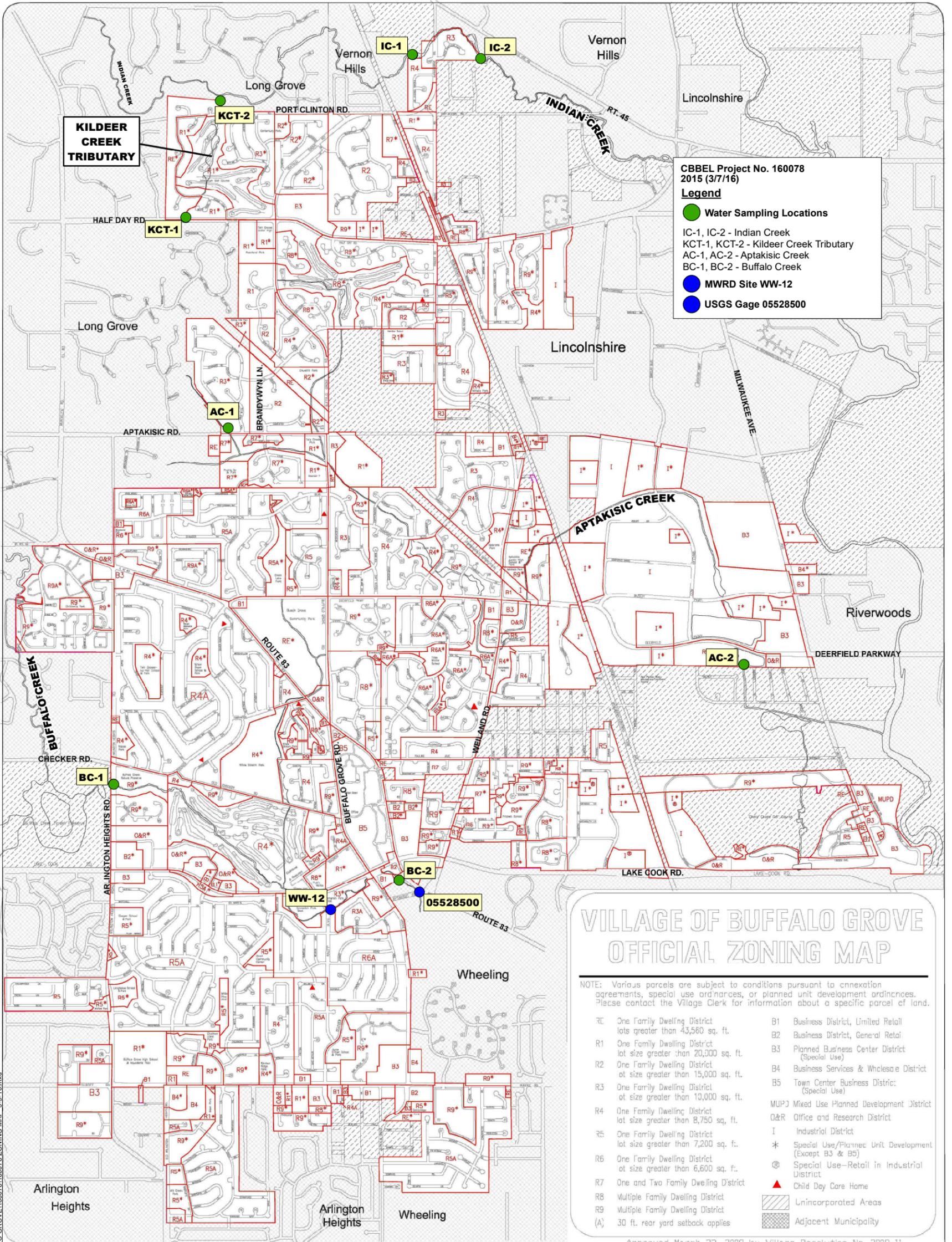
APPENDIX 1

Village Map & Photographs of Sampling Sites



CHRISTOPHER B. BURKE ENGINEERING, LTD.

9575 W Higgins Road, Suite 600 Rosemont, Illinois 60018-4920 Tel (847) 823-0500 Fax (847) 823-0520



CBBEL Project No. 160078
2015 (3/7/16)

Legend

- Water Sampling Locations
- IC-1, IC-2 - Indian Creek
- KCT-1, KCT-2 - Kildeer Creek Tributary
- AC-1, AC-2 - Aptakisic Creek
- BC-1, BC-2 - Buffalo Creek
- MWRD Site WW-12
- USGS Gage 05528500

VILLAGE OF BUFFALO GROVE OFFICIAL ZONING MAP

NOTE: Various parcels are subject to conditions pursuant to annexation agreements, special use ordinances, or planned unit development ordinances. Please contact the Village Clerk for information about a specific parcel of land.

- | | | | |
|-----|---|------|---|
| R1 | One Family Dwelling District lot size greater than 20,000 sq. ft. | B1 | Business District, Limited Retail |
| R2 | One Family Dwelling District at size greater than 15,000 sq. ft. | B2 | Business District, General Retail |
| R3 | One Family Dwelling District at size greater than 10,000 sq. ft. | B3 | Planned Business Center District (Special Use) |
| R4 | One Family Dwelling District lot size greater than 8,750 sq. ft. | B4 | Business Services & Wholesale District |
| R5 | One Family Dwelling District at size greater than 7,200 sq. ft. | B5 | Town Center Business District (Special Use) |
| R6 | One Family Dwelling District at size greater than 6,600 sq. ft. | MUPD | Mixed Use Planned Development District |
| R7 | One and Two Family Dwelling District | O&R | Office and Research District |
| R8 | Multiple Family Dwelling District | I | Industrial District |
| R9 | Multiple Family Dwelling District | * | Special Use/Planned Unit Development (Except B3 & B5) |
| (A) | 30 ft. rear yard setback applies | ⊗ | Special Use—Retail in Industrial District |
| | | ▲ | Child Day Care Home |
| | | ▨ | Unincorporated Areas |
| | | ▩ | Adjacent Municipality |

Approved March 23, 2009 by Village Resolution No. 2009-11



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Village of Buffalo Grove
 Department of Building and Zoning 450-2530
 Division of Planning Services 450-2518

Map prepared by the Division of Planning Services and the Engineering Division of the Department of Public Works

This map is subject to a disclaimer, see <http://www.vbg.org/MAPS/mapdiscalmer.htm>

North

P:\VILLAGE OF BUFFALO GROVE\160078\ZONING MAP_5-9-16.mxd



Sampling Location BC-1 (upstream)



Sampling Location BC-2 (downstream)



Sampling Location BC-2 (downstream)



Dissolved oxygen/ pH / Temperature probes



Sampling Location AC-1 (upstream)



Sampling Location AC-1 (upstream)



Sampling Location AC-2 (downstream)



Sampling Location AC-2 (downstream)



Sampling Location KCT-1 (upstream)



Sampling Location KCT-2 (downstream)



Sampling Location KCT-2 (downstream)



Sampling Location IC-1 (upstream, no IC-2 downstream photo)

CBB **CHRISTOPHER B. BURKE ENGINEERING, LTD.**
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Client:	Village of Buffalo Grove	Project No.:	160078
Title:	NPDES Phase II MS4 Water Sampling, 2016	Date:	10/27/16
		Exhibit No.:	1

MEMORANDUM

APPENDIX 2

CBBEL & MWRD Results Spreadsheets & Prairie Analytical Systems Laboratory Test Results, 2016



CHRISTOPHER B. BURKE ENGINEERING, LTD.

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Buffalo Grove 2016-2009 Selected Water Quality Sampling Results & Historical Downstream Data for Buffalo Creek
CBBEL Project No. 160078

Site Location	BC-1								BC-2								MWRD	Units	State Maximum Standard * or Reference (NE Illinois)	
Analyte	Year	2016	2015	2014	2013	2012	2011	2010	2009	2016	2015	2014	2013	2012	2011	2010	2009	Site WW-12^		
Fecal Coliform		2200	<9.9	200	200	130	40	8	40	2000	<9.9	100	1800	400	170	250	3170	856	no./100 mL	** 200/100 ml; 400/100 ml
Fluoride		NA	0.12	0.131	0.158	0.223	0.213	0.167	0.239	NA	0.186	0.143	0.166	0.215	0.214	0.172	0.296	NA	mg/L	1.4 mg/L
Total Suspended Solids		26.0	5.5	NA	25.0	31.0	38.0	50.5	21.3	33.0	<4.0	NA	<4.0	<4.0	13.5	16.0	14.0	NA	mg/L	*** No GU Std; 15-30 mg/L effluent
Phosphorus (Total)		0.147	NA	NA	0.134	0.0914	0.174	0.181	0.237	0.124	NA	NA	0.078	0.0879	0.126	0.152	0.125	0.16	mg/L	**** Standard NA; 0.05 mg/L
Chloride		176	399	171	206	198	126	126	225	171	490	174	221	206	126	130	254	249	mg/L	500 mg/L
Carbonaceous BOD		4.53	2.88	2.44	3.75	NA	NA	NA	NA	3.3	2.7	<2.0	<2.0	NA	NA	NA	NA	NA	mg/L	*** No GU Std; 8.0 mg/L effluent
Ammonia Nitrogen		0.209	<0.1	<0.1	<0.1	NA	NA	NA	NA	0.243	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA	mg/L	15 mg/L
Field Observation																				
Dissolved Oxygen		6.6	10.1	7.12	7.99	8.47	7.27	6.81	8.15	6.91	10.46	6.24	7.56	5.42	4.82	6.84	4.30	9.9	mg/L	Min 5.0 mg/L Mar-Jul; 3.5 mg/L Aug-Feb
pH		7.64	8.76	7.8	8.05	9.08	8.36	8.34	NA	7.91	7.86	7.43	7.75	7.91	7.63	8.48	7.73	NA	pH	6.5 - 9.0
Conductivity		900	1840	930	1090	1100	910	920	910	930	1960	910	1110	1090	840	930	1420	NA	microsiemens	50-1,500 m s (USEPA)
Temperature		11.2	7.5	24.1	26.8	27.9	26.4	27	25.6	11.1	6.1	22.9	23.3	24.3	27	24.7	20.2	NA	degrees C	Max 32°C Apr-Nov; 16°C Dec-Mar

Notes

Site BC-1 is located at upstream Village limits; Site BC-2 is located at downstream Village limits of Buffalo Creek.

Data is provided for BC-1 & BC-2 samples collected on the following dates: October 27, 2016; March 7, 2016 (2015); August 28, 2014; August 21, 2013; August 31, 2012; August 19, 2011; August 18, 2010; August 5, 2009.

* Standard is listed for *General Use*, except as specified or not provided, per the Illinois Integrated Water Quality Report & Section 303(d) List - 2016.

** Fully Supporting Use (Good water quality) is observed in protected waters when the mean of at least 5 samples within a 5 year period is less than 200 colonies/100 ml, and when less than 10% of samples exceed 400 colonies/100 ml within a 30 day period May-October (or within all samples May-October), for *Primary Contact* Designated Use (Buffalo Creek).

*** There are no General Use Standards for TSS and Carbonaceous Biological Oxygen Demand (CBOD). However, the TSS standard for Public & Food Processing Water Supply is 500 mg/L and for MS4 effluent is 15-30 mg/L. The CBOD standard for MS4 effluent is 8.0 mg/L.

**** Not applicable for the Village sampling sites. The TP water quality standard of 0.05 mg/L particularly applies to lakes and reservoirs with a surface area of >20 acres, or in streams at the point of entry into these lakes and reservoirs.

USEPA standard for conductivity from the USEPA Volunteer Stream Monitoring Manual (1997).

Shaded cells contain results that do not meet State Water Quality Standards.

NA = Not Applicable - a WQS does not apply; or sampling was not completed.

Note - In 2016, some standards were added or modified based on those used in the 2014 Water Quality Report, Buffalo Creek Watershed, Lake and Cook Counties, Illinois, prepared by the Buffalo Creek Clean Water Partnership, dated February 2015.

^ Historical averages of data collected 1977-2009 at Metropolitan Water Reclamation District stream gage WW-12 on Buffalo Creek (below).

Fecal (#/100ml) /Yr	Total P (mg/L) /Yr	D. oxygen (mg/l)	Chloride (mg/l)
60-28,000	0.14-0.18	2.1-13.4	94-882
2000-09	1977-2007	2000-07	2001-07

Buffalo Grove 2016, 2015, 2014, 2013, & 2012 Water Quality Sampling Results
CBBEL Project No. 160078

Site Location	IC-1					IC-2					KCT-1					KCT-2					AC-1					AC-2					BC-1					BC-2					Units	State WQ Standard * or Reference (NE IL)
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012		
Fecal Coliform	5300	50	400	5200	240	<9.9	10	2000	600	40	3200	<9.9	700	46	40	2800	<9.9	400	140	170	3100	<9.9	<99	580	130	<9.9	<9.9	600	290	210	2200	<9.9	200	200	130	2000	<9.9	100	1,800	400	no./100 mL	** >200 col/100 ml; >400 col/100 ml
Fluoride	NA	0.134	0.152	0.168	0.227	NA	0.122	0.159	0.166	0.222	NA	0.126	0.163	0.174	0.213	NA	0.118	0.161	0.156	0.198	NA	0.14	0.154	0.425	0.212	NA	0.195	0.14	0.576	0.209	NA	0.12	0.131	0.158	0.223	NA	0.186	0.143	0.166	0.215	mg/L	1.4 mg/L
Total Suspended Solids	27.5	<4.0	NA	<4.0	<4.0	30.0	<4.0	NA	<4.0	14.5	45.0	10.5	NA	<4.0	12.5	36.5	19.0	NA	43.0	23.5	3.5	<4.0	NA	23.0	5.0	21.5	12.0	NA	15.5	19.5	26.0	5.5	NA	25.0	31.0	33.0	<4.0	NA	<4.0	<4.0	mg/L	*** No GU Std; 15-30mg/L effluent
Phosphorus (Total)	0.121	NA	NA	0.0597	0.119	0.147	NA	NA	0.0725	0.122	0.188	NA	NA	0.152	0.401	0.15	NA	NA	0.242	0.264	0.039	NA	NA	0.0982	0.0776	0.0828	NA	NA	0.0674	0.0983	0.147	NA	NA	0.134	0.0914	0.124	NA	NA	0.0777	0.0879	mg/L	**** Standard NA; 0.05 mg/L
Chloride	119	286	178	220	220	121	293	179	216	219	150	230	151	323	406	145	207	148	125	111	157	291	141	109	101	135	679	188	92.7	200	176	399	171	206	198	171	490	174	221	206	mg/L	500 mg/L
Ammonia Nitrogen	0.121	NA	<0.1	NA	NA	0.122	NA	<0.1	NA	NA	NA	NA	<0.1	NA	NA	NA	NA	<0.1	NA	NA	NA	NA	<0.1	NA	NA	NA	NA	<0.1	NA	NA	0.209	<0.1	<0.1	<0.10	NA	0.243	<0.1	<0.1	<0.10	NA	mg/L	15 mg/L
CBOD	4.23	NA	<2.0	NA	NA	4.35	NA	2.56	NA	NA	NA	NA	3.22	NA	NA	NA	NA	4.03	NA	NA	NA	NA	3.4	NA	NA	NA	NA	3.46	NA	NA	4.53	2.88	2.44	3.75	NA	3.30	2.70	<2.0	<2.0	NA	mg/L	*** No GU Std; 8.0 mg/L effluent
Nitrate N	0.265	NA	NA	NA	NA	0.281	NA	NA	NA	NA	0.107	NA	NA	NA	NA	0.124	NA	NA	NA	NA	0.328	NA	NA	NA	NA	0.228	NA	NA	NA	NA	0.299	NA	NA	NA	NA	0.27	NA	NA	NA	NA	mg/L	No GU Std; 10.0 mg/L (PFPWS)
Nitrite N	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.25	NA	NA	NA	NA	<0.25	NA	NA	NA	NA	mg/L	No WQS
Kjeldahl N	0.693	NA	NA	NA	NA	0.743	NA	NA	NA	NA	0.949	NA	NA	NA	NA	0.926	NA	NA	NA	NA	0.714	NA	NA	NA	NA	0.608	NA	NA	NA	NA	1.07	NA	NA	NA	NA	0.80	NA	NA	NA	NA	mg/L	20.0 mg/L (STEWV)
Total Nitrogen	0.958	NA	NA	NA	NA	1.02	NA	NA	NA	NA	1.06	NA	NA	NA	NA	1.05	NA	NA	NA	NA	1.04	NA	NA	NA	NA	<0.85	NA	NA	NA	NA	1.37	NA	NA	NA	NA	1.08	NA	NA	NA	NA	mg/L	No WQS
Oil & Grease	<0.455	NA	NA	NA	NA	<0.455	NA	NA	NA	NA	<0.459	NA	NA	NA	NA	<0.455	NA	NA	NA	NA	0.505	NA	NA	NA	NA	1.02	NA	NA	NA	NA	0.625	NA	NA	NA	NA	0.81	NA	NA	NA	NA	mg/L	No GU Std; 0.1 mg/L (PFPWS)
Field Observation																																										
Dissolved Oxygen	6.78	11.23	6.7	5.35	5.92	6.96	10.84	6.42	7.01	6.6	6.42	9.9	4.84	3.26	4.79	6.96	9.84	5.29	3.35	7.00	5.61	9.54	5.85	3.10	3.63	6.48	11.03	5.15	9.48	4.38	6.6	10.1	7.12	7.99	8.47	6.91	10.46	6.24	7.56	5.42	mg/L	Min 5.0 mg/L Mar-Jul; 3.5 mg/L Aug-Feb
pH	8.09	8.4	7.71	7.43	8.04	7.96	8.01	7.37	7.8	8.13	8.24	8.61	7.38	7.43	8.09	8.17	8.25	7.46	7.5	8.33	8.20	8.45	7.61	7.30	7.76	8.29	8.29	7.71	7.97	8.09	7.64	8.76	7.8	8.05	9.08	7.91	7.86	7.43	7.75	7.91	pH	6.5 - 9.0
Conductivity	780	1540	1070	1160	1150	820	1530	1060	1150	1170	960	1350	960	1430	1780	960	1330	1030	1050	1190	940	1510	990	780	800	960	1530	1010	810	1170	900	1840	930	1090	1100	930	1960	910	1110	1090	micro siemens	50-1,500 m s (USEPA)
Temperature	11.1	7.1	22.1	21.5	25.5	11.0	7.0	22.4	23.6	25.6	10.5	7.6	23.8	23.8	28.8	10.5	7.5	24.1	25.0	27.3	11.6	7.3	23.0	21.2	26.3	10.5	5.6	24.3	26.1	25.3	11.2	7.5	24.1	26.8	27.9	11.1	6.1	22.9	23.3	24.3	degrees C	Max 32°C Apr-Nov; 16°C Dec-Mar

Note - 2016 sampling parameters and results are in bold type. Data is provided for samples collected on the following dates: October 27, 2016, March 7, 2016 (2015); August 28, 2014; August 21, 2013; August 31, 2012. Data from August 19, 2011, August 18, 2010 and August 5, 2009 were provided in previous reports.

* Standard is listed for *General Use*, except as specified or not provided, per the Illinois Integrated Water Quality Report & Section 303(d) List - 2016.

** Fully Supporting Use is observed in protected waters when the mean of at least 5 samples within a 5 year period is less than 200 colonies/100 ml, or when less than 10% of samples exceed 400 colonies/100 ml within a 30 day period May-October (or within all samples May-October). This standard for Primary Contact Designated Use applies to Buffalo Creek and not to Indian Creek, Kildeer Creek Tributary & Aptakisic Creek.

*** There are no General Use Standards for TSS and Carbonaceous Biological Oxygen Demand (CBOD). However, the TSS standard for *Public & Food Processing Water Supply* is 500 mg/L and the standard for MS4 effluent is 15-30 mg/L. The CBOD standard for MS4 effluent is 8.0 mg/L.

**** Not applicable for the Village sampling sites. The TP water quality standard of 0.05 mg/L particularly applies to lakes and reservoirs with a surface area of ≥20 acres, or in streams at the point of entry into these lakes and reservoirs.

USEPA standard for conductivity from the USEPA Volunteer Stream Monitoring Manual (1997).

STEWV standard for Kjeldahl N from the Standard Methods for the Examination of Water and Wastewater (1999).

NA; PFPWS standard for Nitrate N from Public and Food Processing Water Supply.

Shaded cells indicate that the measurement does not meet State Water Quality Standards.

U = Undetected; less than laboratory Recording Limit or Method Detection Limit.

NA = Not Applicable - sampling was discontinued or not completed.

Note - In 2016, some standards were added or modified based on those used in the 2014 Water Quality Report, Buffalo Creek Watershed, Lake and Cook Counties, Illinois, prepared by the Buffalo Creek Clean Water Partnership, dated February 2015.

Site Locations:

IC-1 at upstream Village limits; IC-2 at downstream Village limits (Indian Creek)

KCT-1 at upstream Village limits; KCT-2 at downstream Village limits (Kildeer Creek Tributary)

AC-1 at upstream Village limits; AC-2 at downstream Village limits (Aptakisic Creek)

BC-1 at upstream Village limits; BC-2 at downstream Village limits (Buffalo Creek)

Buffalo Creek Water Sample Results, Site WW-12
 Metropolitan Water Reclamation District of Greater Chicago
 2015

			FEC_COL	CL	DO	TDS	TKN	BOD5	Tot Phos	SS	TEMP	pH	COND	Ca
Collect date	ID Text *	Time collected	CTS/100mL	mg/L	mg/L	ppm	mg/L	mg/L	mg/L	mg/L	C		umhos/cm	mg/L
6/1/15	WW_12_01-JUN-2015_7408875	945	150	337	8.9	904	1.12	<2	<0.10	4	15.5	7.64	1365.0	72.20
7/6/15	WW_12_06-JUL-2015_7436049	900	360	260	7.7	728	<1.00	<2	<0.10	4	23.0	7.15	<10.0	58.21
8/3/15	WW_12_03-AUG-2015_7455554	1040	11000	184	8.1	524	<1.00	3	<0.10	5	23.3	7.15	960.5	46.10
9/8/15	WW_12_08-SEP-2015_7484500	920	840	209	6.8	624	<1.00	<2	<0.10	<4	24.3	7.43	987.3	44.72
10/5/15	WW_12_05-OCT-2015_7506931	930	220	177	8.2	618	<1.00	<2	<0.10	4	14.5	6.95	993.2	53.29

Water samples collected from Lake Cook Road
 Results provided by Thomas Minarik Jr., Aquatic Biologist
 Metropolitan Water Reclamation District of Greater Chicago
 6001 West Pershing Rd.
 Cicero, IL 60804-4112
 (708) 588-4223, MinarikT@mwrdd.org



Tuesday, November 8, 2016

Mr. Eric Japsen
Christopher B. Burke Engineering, LTD
9575 West Higgins Road Suite 600
Rosemont, IL 60018
TEL: (847) 823-0500
FAX: (847) 823-0520

RE: Buffalo Grove 160078

PAS WO: 16J0628

Prairie Analytical Systems, Inc. received 8 sample(s) on 10/27/2016 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

This report shall not be reproduced, except in full, without the prior written consent of Prairie Analytical Systems, Inc.

If you have any questions, please feel free to contact me at (224) 253-1348.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Christina E. Pierce".

Christina E. Pierce
Project Manager

Certifications: NELAP/NELAC - IL #100323

1210 Capital Airport Drive	*	Springfield, IL 62707	*	1.217.753.1148	*	1.217.753.1152 Fax
9114 Virginia Road Suite #112	*	Lake in the Hills, IL 60156	*	1.847.651.2604	*	1.847.458.0538 Fax

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Case Narrative

Client has requested that the sample results be reported down to the MDL. Results reported between the reporting limit and the MDL are marked with a J flag.

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: BC 1
Collection Date: 10/27/16 12:40

Lab Order: 16J0628
Lab ID: 16J0628-01
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	176	50.0		mg/L	1000	10/28/16 9:18	10/28/16 18:00	EPA300.0	JK
*Nitrate (as N)	0.299	0.250		mg/L	10	11/1/16 9:00	11/1/16 16:52	EPA300.0	JKK
*Nitrite (as N)	U	0.250	M	mg/L	10	11/1/16 9:00	11/1/16 16:52	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.37	1.00		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
*Ammonia (as N)	0.209	0.100		mg/L	1	11/2/16 9:27	11/2/16 12:14	SM4500NH3-	DMS
Total Kjeldahl Nitrogen	1.07	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	0.625	0.469	J, M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Carbonaceous BOD	4.53	2.00		mg/L	1	10/28/16 12:10	11/2/16 10:05	SM5210B	KSH
*Phosphorus	0.147	0.0500		mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	26.0	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	2200	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: BC 2
Collection Date: 10/27/16 9:30

Lab Order: 16J0628
Lab ID: 16J0628-02
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	171	50.0		mg/L	1000	10/28/16 9:18	10/28/16 18:21	EPA300.0	JK
*Nitrate (as N)	0.274	0.250		mg/L	10	11/1/16 9:00	11/1/16 17:11	EPA300.0	JKK
*Nitrite (as N)	U	0.250	M	mg/L	10	11/1/16 9:00	11/1/16 17:11	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.08	1.00		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
*Ammonia (as N)	0.243	0.100		mg/L	1	11/3/16 17:13	11/3/16 17:16	SM4500NH3-	ADH
Total Kjeldahl Nitrogen	0.803	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	0.808	0.455	J, M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Carbonaceous BOD	3.30	2.00		mg/L	1	10/28/16 12:10	11/2/16 10:05	SM5210B	KSH
*Phosphorus	0.124	0.0500		mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	33.0	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	2000	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: AC 1
Collection Date: 10/27/16 12:15

Lab Order: 16J0628
Lab ID: 16J0628-03
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	157	50.0		mg/L	1000	10/28/16 9:18	10/28/16 18:42	EPA300.0	JK
*Nitrate (as N)	0.328	0.250		mg/L	10	11/1/16 9:00	11/1/16 17:30	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 17:30	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.04	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
Total Kjeldahl Nitrogen	0.714	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	0.505	0.455	J, M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Phosphorus	0.0392	0.0500	J	mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	3.50	4.00	J	mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	3100	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: AC 2
Collection Date: 10/27/16 9:55

Lab Order: 16J0628
Lab ID: 16J0628-04
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	135	50.0		mg/L	1000	10/28/16 9:18	10/28/16 19:04	EPA300.0	JK
*Nitrate (as N)	0.228	0.250	J	mg/L	10	11/1/16 9:00	11/1/16 17:49	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 17:49	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	U	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
Total Kjeldahl Nitrogen	0.608	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	1.02	0.459	J, M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Phosphorus	0.0828	0.0500		mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	21.5	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	U	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: IC 1
Collection Date: 10/27/16 11:00

Lab Order: 16J0628
Lab ID: 16J0628-05
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	119	50.0		mg/L	1000	10/28/16 9:18	10/28/16 19:24	EPA300.0	JK
*Nitrate (as N)	0.265	0.250		mg/L	10	11/1/16 9:00	11/1/16 18:08	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 18:08	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	0.958	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
*Ammonia (as N)	0.121	0.100		mg/L	1	11/3/16 17:13	11/3/16 17:16	SM4500NH3-	ADH
Total Kjeldahl Nitrogen	0.693	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	U	0.455	M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Carbonaceous BOD	4.23	2.00		mg/L	1	10/28/16 12:10	11/2/16 10:05	SM5210B	KSH
*Phosphorus	0.121	0.0500		mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	27.5	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	5300	99		no./100 mL	100	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: IC 2
Collection Date: 10/27/16 10:30

Lab Order: 16J0628
Lab ID: 16J0628-06
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	121	50.0		mg/L	1000	10/28/16 9:18	10/28/16 19:45	EPA300.0	JK
*Nitrate (as N)	0.281	0.250		mg/L	10	11/1/16 9:00	11/1/16 18:27	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 18:27	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.02	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
*Ammonia (as N)	0.122	0.100		mg/L	1	11/3/16 17:13	11/3/16 17:16	SM4500NH3-	ADH
Total Kjeldahl Nitrogen	0.743	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	U	0.455	M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Carbonaceous BOD	4.35	2.00		mg/L	1	10/28/16 12:10	11/2/16 10:05	SM5210B	KSH
*Phosphorus	0.147	0.0500		mg/L	2	11/3/16 10:02	11/3/16 12:34	SM4500P-E	KSH
*Total Suspended Solids	30.0	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	U	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: KCT 1
Collection Date: 10/27/16 11:50

Lab Order: 16J0628
Lab ID: 16J0628-07
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	150	50.0		mg/L	1000	10/28/16 9:18	10/28/16 20:05	EPA300.0	JK
*Nitrate (as N)	0.107	0.250	J	mg/L	10	11/1/16 9:00	11/1/16 18:46	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 18:46	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.06	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
Total Kjeldahl Nitrogen	0.949	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	U	0.459	M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Phosphorus	0.188	0.0500	I	mg/L	2	11/7/16 16:35	11/7/16 16:40	SM4500P-E	ADH
*Total Suspended Solids	45.0	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	3200	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078
Client Sample ID: KCT 2
Collection Date: 10/27/16 11:30

Lab Order: 16J0628
Lab ID: 16J0628-08
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
*Chloride	145	50.0		mg/L	1000	10/28/16 9:18	10/28/16 20:26	EPA300.0	JK
*Nitrate (as N)	0.124	0.250	J	mg/L	10	11/1/16 9:00	11/1/16 19:05	EPA300.0	JKK
*Nitrite (as N)	U	0.100	M	mg/L	10	11/1/16 9:00	11/1/16 19:05	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	1.05	0.850		mg/L	10	11/4/16 9:52	11/4/16 16:27	EPA300.0/SM	DMS
Total Kjeldahl Nitrogen	0.926	0.500		mg/L	1	11/4/16 9:52	11/4/16 16:27	SM4500NH3-	DMS
*Oil and Grease	U	0.455	M	mg/L	1	11/4/16 13:46	11/7/16 16:21	EPA1664A	TSD
*Phosphorus	0.150	0.0500		mg/L	2	11/7/16 16:35	11/7/16 16:40	SM4500P-E	ADH
*Total Suspended Solids	36.5	4.00		mg/L	1	11/1/16 14:09	11/2/16 10:25	SM2540D	DMS
Microbiological Parameters									
*Fecal Coliform	2800	9.9		no./100 mL	10	10/27/16 16:15	10/28/16 14:35	SM9222D	CEP

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD
Project: Buffalo Grove 160078

Lab Order: 16J0628

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006424 - EPA 300.0/SW 9056A Anions

Blank (Z006424-BLK1) Prepared & Analyzed: 10/28/2016

Chloride U 0.0500 mg/L

LCS (Z006424-BS1) Prepared & Analyzed: 10/28/2016

Chloride 0.159 0.0500 mg/L 0.15000 106 90-110

Matrix Spike (Z006424-MS1) Source: 16J0595-05 Prepared & Analyzed: 10/28/2016

Chloride 39.6 0.526 mg/L 1.5789 38.2 85 90-110 E

Matrix Spike (Z006424-MS2) Source: 16J0620-01 Prepared & Analyzed: 10/28/2016

Chloride 26.0 0.526 mg/L 1.5789 25.1 59 90-110 E

Matrix Spike Dup (Z006424-MSD1) Source: 16J0595-05 Prepared & Analyzed: 10/28/2016

Chloride 39.3 0.526 mg/L 1.5789 38.2 68 90-110 0.7 20 E

Matrix Spike Dup (Z006424-MSD2) Source: 16J0620-01 Prepared & Analyzed: 10/28/2016

Chloride 26.3 0.526 mg/L 1.5789 25.1 78 90-110 1 20 E

Batch Z006462 - EPA 300.0/SW 9056A Anions

Blank (Z006462-BLK1) Prepared & Analyzed: 11/01/2016

Nitrate (as N) U 0.0250 mg/L

Nitrite (as N) U 0.0100 mg/L M

LCS (Z006462-BS1) Prepared & Analyzed: 11/01/2016

Nitrate (as N) 0.110 0.0250 mg/L 0.11295 97 90-110

Nitrite (as N) 0.161 0.0250 mg/L 0.15223 106 90-110

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006462 - EPA 300.0/SW 9056A Anions

Matrix Spike (Z006462-MS1)

Source: 16J0665-01

Prepared & Analyzed: 11/01/2016

Nitrate (as N)	1.91	0.263	mg/L	1.1889	0.808	93	90-110			
Nitrite (as N)	1.60	0.263	mg/L	1.6024	ND	100	90-110			

Matrix Spike (Z006462-MS2)

Source: 16J0662-01

Prepared & Analyzed: 11/01/2016

Nitrate (as N)	1.24	0.263	mg/L	1.1889	0.143	92	90-110			
Nitrite (as N)	1.62	0.263	mg/L	1.6024	ND	101	90-110			

Matrix Spike Dup (Z006462-MSD1)

Source: 16J0665-01

Prepared & Analyzed: 11/01/2016

Nitrate (as N)	1.93	0.263	mg/L	1.1889	0.808	94	90-110	0.7	20	
Nitrite (as N)	1.59	0.263	mg/L	1.6024	ND	99	90-110	0.7	20	

Matrix Spike Dup (Z006462-MSD2)

Source: 16J0662-01

Prepared & Analyzed: 11/01/2016

Nitrate (as N)	1.25	0.263	mg/L	1.1889	0.143	93	90-110	0.6	20	
Nitrite (as N)	1.61	0.263	mg/L	1.6024	ND	100	90-110	0.4	20	

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006412 - EPA 405.1/SM 5210B CBOD

Blank (Z006412-BLK1)

Prepared: 10/28/2016 Analyzed: 11/02/2016

Carbonaceous BOD U 2.00 mg/L

LCS (Z006412-BS1)

Prepared: 10/28/2016 Analyzed: 11/02/2016

Carbonaceous BOD 178 33.3 mg/L 198.00 90 84.6-115.4

Batch Z006472 - EPA 160.2/SM 2540D TSS

Blank (Z006472-BLK1)

Prepared: 11/01/2016 Analyzed: 11/02/2016

Total Suspended Solids U 4.00 mg/L

LCS (Z006472-BS1)

Prepared: 11/01/2016 Analyzed: 11/02/2016

Total Suspended Solids 96.0 8.00 mg/L 100.00 96 80-120

Duplicate (Z006472-DUP1)

Source: 16J0628-02

Prepared: 11/01/2016 Analyzed: 11/02/2016

Total Suspended Solids 33.0 4.00 mg/L 33.0 0 10

Batch Z006497 - SM 4500-NH3 D Ammonia

Blank (Z006497-BLK1)

Prepared & Analyzed: 11/02/2016

Ammonia (as N) U 0.0812 mg/L

M

LCS (Z006497-BS1)

Prepared & Analyzed: 11/02/2016

Ammonia (as N) 5.07 0.100 mg/L 5.0000 101 80-120

Duplicate (Z006497-DUP1)

Source: 16J0544-01

Prepared & Analyzed: 11/02/2016

Ammonia (as N) U 0.100 mg/L ND 20

LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006497 - SM 4500-NH3 D Ammonia

Matrix Spike (Z006497-MS1)

Source: 16J0544-01

Prepared & Analyzed: 11/02/2016

Ammonia (as N)	4.76	0.100	mg/L	5.0000	ND	95	80-120			
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Matrix Spike Dup (Z006497-MSD1)

Source: 16J0544-01

Prepared & Analyzed: 11/02/2016

Ammonia (as N)	5.03	0.100	mg/L	5.0000	ND	101	80-120	6	20	
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Batch Z006520 - EPA 365.2/SM 4500-P B Phosphorus

Blank (Z006520-BLK1)

Prepared & Analyzed: 11/03/2016

Phosphorus	U	0.0500	mg/L							
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LCS (Z006520-BS1)

Prepared & Analyzed: 11/03/2016

Phosphorus	0.270	0.0500	mg/L	0.25000		108	80-120			
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LCS Dup (Z006520-BSD1)

Prepared & Analyzed: 11/03/2016

Phosphorus	0.257	0.0500	mg/L	0.25000		103	80-120	5	20	
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Duplicate (Z006520-DUP1)

Source: 16J0628-01

Prepared & Analyzed: 11/03/2016

Phosphorus	0.134	0.0500	mg/L		0.147			9	20	
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Matrix Spike (Z006520-MS1)

Source: 16J0628-01

Prepared & Analyzed: 11/03/2016

Phosphorus	0.355	0.0500	mg/L	0.25000	0.147	83	80-120			
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Matrix Spike Dup (Z006520-MSD1)

Source: 16J0628-01

Prepared & Analyzed: 11/03/2016

Phosphorus	0.355	0.0500	mg/L	0.25000	0.147	83	80-120	0	20	
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Batch Z006546 - SM 4500-NH3 D Ammonia

Blank (Z006546-BLK1)

Prepared & Analyzed: 11/03/2016

Ammonia (as N)	U	0.100	mg/L							
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LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006546 - SM 4500-NH3 D Ammonia

LCS (Z006546-BS1)

Prepared & Analyzed: 11/03/2016

Ammonia (as N)	5.29	0.100	mg/L	5.0000		106	80-120			
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Duplicate (Z006546-DUP1)

Source: 16J0590-01

Prepared & Analyzed: 11/03/2016

Ammonia (as N)	U	0.100	mg/L		ND				20	
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Matrix Spike (Z006546-MS1)

Source: 16J0590-01

Prepared & Analyzed: 11/03/2016

Ammonia (as N)	6.84	0.100	mg/L	5.0000	ND	137	80-120			I, S
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Matrix Spike Dup (Z006546-MSD1)

Source: 16J0590-01

Prepared & Analyzed: 11/03/2016

Ammonia (as N)	6.68	0.100	mg/L	5.0000	ND	134	80-120	2	20	I, S
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Batch Z006556 - EPA 351.4/SM 4500-Norg C TKN

Blank (Z006556-BLK1)

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	U	0.500	mg/L							
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LCS (Z006556-BS1)

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	4.51	0.500	mg/L	5.0000		90	70-130			
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LCS Dup (Z006556-BSD1)

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	4.49	0.500	mg/L	5.0000		90	70-130	0.4	20	
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Duplicate (Z006556-DUP1)

Source: 16K0031-02

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	0.603	0.500	mg/L		0.567			6	20	
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Matrix Spike (Z006556-MS1)

Source: 16K0031-02

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	4.01	0.500	mg/L	5.0000	0.567	69	70-130			S
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LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006556 - EPA 351.4/SM 4500-Norg C TKN

Matrix Spike Dup (Z006556-MSD1)

Source: 16K0031-02

Prepared & Analyzed: 11/04/2016

Total Kjeldahl Nitrogen	4.32	0.500	mg/L	5.0000	0.567	75	70-130	7	20	
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Batch Z006570 - EPA 1664A FOG

Blank (Z006570-BLK1)

Prepared: 11/04/2016 Analyzed: 11/07/2016

Oil and Grease	U	0.450	mg/L							M
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LCS (Z006570-BS1)

Prepared: 11/04/2016 Analyzed: 11/07/2016

Oil and Grease	16.6	1.00	mg/L	20.000		83	78-114			
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Batch Z006598 - EPA 365.2/SM 4500-P B Phosphorus

Blank (Z006598-BLK1)

Prepared & Analyzed: 11/07/2016

Phosphorus	U	0.0500	mg/L							
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LCS (Z006598-BS1)

Prepared & Analyzed: 11/07/2016

Phosphorus	0.237	0.0500	mg/L	0.25000		95	80-120			
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LCS Dup (Z006598-BSD1)

Prepared & Analyzed: 11/07/2016

Phosphorus	0.232	0.0500	mg/L	0.25000		93	80-120	2	20	
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Duplicate (Z006598-DUP1)

Source: 16J0628-07

Prepared & Analyzed: 11/07/2016

Phosphorus	0.183	0.0500	mg/L		0.188			3	20	
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Matrix Spike (Z006598-MS1)

Source: 16J0628-07

Prepared & Analyzed: 11/07/2016

Phosphorus	0.376	0.0500	mg/L	0.25000	0.188	75	80-120			I, S
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LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch Z006598 - EPA 365.2/SM 4500-P B Phosphorus

Matrix Spike Dup (Z006598-MSD1)

Source: 16J0628-07

Prepared & Analyzed: 11/07/2016

Phosphorus	0.363	0.0500	mg/L	0.25000	0.188	70	80-120	3	20	I, S
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LABORATORY RESULTS

Client: Christopher B. Burke Engineering, LTD

Project: Buffalo Grove 160078

Lab Order: 16J0628

Notes and Definitions

- S Spike recovery outside acceptance limits.
- M Reporting limit set between LOQ and MDL.
- J Analyte detected between reporting level and MDL.
- I Matrix interference.
- E Result above quantitation range.
- * NELAC certified compound.
- U Analyte not detected (i.e. less than RL or MDL).

Part D. Summary of Year 15 Stormwater Activities

(Present a summary of the storm water activities you plan to undertake during the next reporting cycle, including an implementation schedule in the sections following the table.)

The table shown below summarizes the BMPs committed to for Year 15. Specific BMPs and measurable goals for Year 15 program development activities are presented in the sections following the table.

Note: X indicates BMPs committed to for Year 15.

Year 15	
MS4	
A. Public Education and Outreach	
X	A.1 Distributed Paper Material
X	A.2 Speaking Engagement
X	A.3 Public Service Announcement
X	A.4 Community Event
	A.5 Classroom Education Material
X	A.6 Other Public Education
B. Public Participation/Involvement	
	B.1 Public Panel
X	B.2 Educational Volunteer
X	B.3 Stakeholder Meeting
	B.4 Public Hearing
	B.5 Volunteer Monitoring
X	B.6 Program Coordination
X	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination	
X	C.1 Storm Sewer Map Preparation
X	C.2 Regulatory Control Program
X	C.3 Detection/Elimination Prioritization Plan
X	C.4 Illicit Discharge Tracing Procedures
X	C.5 Illicit Source Removal Procedures
X	C.6 Program Evaluation and Assessment
X	C.7 Visual Dry Weather Screening
X	C.8 Pollutant Field Testing
	C.9 Public Notification
X	C.10 Other Illicit Discharge Controls

Year 15	
MS4	
D. Construction Site Runoff Control	
X	D.1 Regulatory Control Program
X	D.2 Erosion and Sediment Control BMPs
	D.3 Other Waste Control Program
X	D.4 Site Plan Review Procedures
X	D.5 Public Information Handling Procedures
X	D.6 Site Inspection/Enforcement Procedures
	D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control	
X	E.1 Community Control Strategy
X	E.2 Regulatory Control Program
X	E.3 Long Term O&M Procedures
X	E.4 Pre-Const Review of BMP Designs
X	E.5 Site Inspections During Construction
X	E.6 Post-Construction Inspections
	E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping	
X	F.1 Employee Training Program
X	F.2 Inspection and Maintenance Program
X	F.3 Municipal Operations Storm Water Control
X	F.4 Municipal Operations Waste Disposal
X	F.5 Flood Management/Assess Guidelines
X	F.6 Other Municipal Operations Controls

1. Public Education and Outreach

The Village is committing to conduct Public Education and Outreach as part of its permit. Public Education and Outreach requires implementation of a program to distribute educational material to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants to stormwater runoff. The Village commits to implementation of BMPs related to A.1, A.2, A.3, A.4 and A.6 as described below.

BMP No. A.1

Brief Description of BMP:

The Village distributes a variety of paper materials from a number of sources informing the public about stormwater or water quality and why they are important.

Measurable Goal(s), including frequencies:

As in past years, the Village will distribute educational materials at the Public Works Open House. The materials chosen will be targeted toward residents, businesses and other potential pollutant sources to create better awareness and knowledge of the issue.

Milestones: **Year 15:** The Village will continue to distribute the educational materials at the Public Works Open House.

BMP No. A.2

Brief Description of BMP:

The Village regularly participates in or provides presentations to local civic clubs, watershed groups or other interested parties on topics related to NPDES, stormwater quality or other similar subjects. Speaking engagements provide the opportunity to inform concerned citizens or interested parties about stormwater quality, environmental impacts and other issues NPDES related issues and activities including ways to help.

Measurable Goal(s), including frequencies:

The Village will provide a speaking engagement to a local group regarding stormwater quality or related issue.

Milestones: **Year 15:** The Village will provide a presentation or speaking engagement to the Lake County Stormwater Management Commission Municipal Advisory Committee.

BMP No. A.3

Brief Description of BMP:

The Village publishes information about stormwater or water quality in the Village newsletter.

Measurable Goal(s), including frequencies:

The articles chosen will be selected to increase the resident's knowledge and awareness regarding stormwater and water quality.

Milestones: **Year 15:** Publish information articles in the Village newsletter at least once a year.

BMP No. A.4

Brief Description of BMP:

The Village will also continue its presence and support Village sponsored public engagements and events. These activities provide opportunities to engage the public on stormwater and/or environmental related issues and why they are important to all residents and businesses.

Measurable Goal(s), including frequencies:

The Mayor and Village have committed to National Wildlife Foundation's Mayors Monarch Pledge. The goal of this program is help save the monarch butterfly through the action of local units of government and other interested parties. This goal of this program is similar to many aspects of the NPDES program through protecting the environment, increasing or improving open space with naturalized planting and general environmental awareness and stewardess. This program allows the Village the opportunity engage the community through this and other similar events.

Milestones: **Year 15:** Maintain the existing program and seek additional partnerships or events as funding allows.

BMP No. A.6

Brief Description of BMP:

The Village will utilize other means such as the Village website as a conduit for reaching additional residents.

Measurable Goal(s), including frequencies:

The Village will provide specific information to the targeted residents on stormwater and water quality issues.

Milestones: **Year 15:** The Village will update and modify the information provided as needed to stay current and informative.

2. Public Participation/Involvement

The Village will perform activities and services related to the Public Participation/Involvement minimum control measure. BMPs will be implemented under BMP numbers B.2, B.3, B.6 and B.7 as described below.

BMP No. B.2

Brief Description of BMP:

Village staff regularly participates in volunteering activities that provide opportunities to interact with residents and educate them on the importance of stormwater and water quality. These include many local planning and watershed groups such as Des Plaines

River Watershed Workgroup (DRWW), the Municipal Advisory Committee (MAC) of the Lake County Stormwater Management Commission, the Lower Des Plaines Watershed Planning Council and Buffalo Creek Clean Water Partnership (BCCWP).

Measurable Goal(s), including frequencies:

Village staff will continue to perform these activities and work to increase participation from its staff and attendance by residents.

Milestones: **Year 15:** The Village will participate in at least one volunteering activity each year.

BMP No. B.3

Brief Description of BMP:

The Village will work to conduct stakeholder meetings as needed to connect directly with impacted residents and to distribute information.

Measurable Goal(s), including frequencies:

Stakeholder meetings offer direct input on issues impacting residents and provide an opportunity to gather feedback as well as disseminate stormwater related information.

Milestones: **Year 15:** The Village will continue to attend stakeholder meetings.

BMP No. B.6

Brief Description of BMP:

Annually host a clean-up event around a stream or a detention basin. Track the number of residents participating in the event and the amount of waste collected.

Measurable Goal(s), including frequencies:

Host a community clean-up event around a stream or a detention basin. Track the number of residents participating in the event and the amount of waste collected.

Milestones: **Year 15:** The Village will continue to host events.

BMP No. B.7

Brief Description of BMP:

Annually inform residents of the existence of a telephone number for reporting stormwater related issues. Document the number of resident reports received annually.

Measurable Goal(s), including frequencies:

Document the number of resident reports received.

Milestones: **Year 15:** The Village will continue with the program.

3. Illicit Discharge Detection and Elimination

The Village commits to performing some activities related to the Illicit Discharge Detection and Elimination minimum control. BMPs will be implemented under BMP numbers C.1, C.2, C.3, C.4, C.5, C.6, C.7, C.8 and C.10 as described below.

BMP No. C.1

Brief Description of BMP:

The Village has a storm sewer mapping system of the receiving streams and outfalls.

Measurable Goal(s), including frequencies:

The Village will review the map and update as needed.

Milestones: **Year 15:** The Village will continue to update the map as necessary.

BMP No. C.2

Brief Description of BMP:

The Village has an ordinance for Illicit Discharge and Detection Ordinance.

Measurable Goal(s), including frequencies:

The Village will continue to enforce the existing ordinance that prevent non-stormwater discharges to reduce or eliminate pollutants from entering the municipal separate storm sewer system.

Milestones: **Year 15:** The Village will continue to enforce the existing ordinance.

BMP No. C.3

Brief Description of BMP:

The Village utilizes various tools to identify and report potential illicit discharges. The Village also investigates reports of illicit discharges.

Measurable Goal(s), including frequencies:

The Village will continue to identify and investigate potential illicit discharges to reduce or eliminate the impact on local stormwater systems and receiving streams.

Milestones: **Year 15:** The Village will continue to identify and investigate potential illicit discharges.

BMP No. C.4/C.5

Brief Description of BMP:

Develop procedures to trace and remove detected illicit discharges. Annually trace and remove all illicit discharges identified by resident reporting, visual dry weather screening, and public works maintenance activities.

Measurable Goal(s), including frequencies:

The Village will track, investigate and eliminate illicit discharges as reported, observed or identified

Milestones: **Year 15:** The Village will trace and eliminate illicit discharges as needed.

BMP No. C.6

Brief Description of BMP:

The Village will evaluate the illicit discharge and detection program for effectiveness and possible improvements.

Measurable Goal(s), including frequencies:

Regular evaluation of the program can provide valuable input and opportunity for improvement.

Milestones: **Year 15:** The Village will evaluate the program at least once a year.

BMP No. C.7

Brief Description of BMP:

Annual screening of all outfalls to identify any illicit discharges. Annual screening of 20% of storm sewer structures (manholes, catch basins, and inlets), with a priority placed on storm sewer structures located in industrial areas.

Measurable Goal(s), including frequencies:

The Village will work to utilize inspection forms while performing the dry weather screening inspections.

Milestones: **Year 15:** The Village will evaluate its dry weather inspection form and procedures.

BMP No. C.8

Brief Description of BMP:

The Village regularly samples, test and documents the results of influent and effluent flow to various lakes and streams throughout the community.

Measurable Goal(s), including frequencies:

The Village analyzes the stormwater quality to determine acceptable levels of water quality of its lakes and streams.

Milestones: **Year 15:** The Village will continue the testing.

BMP No. C.10

Brief Description of BMP:

The Village performs annual monitoring of the receiving waters as required by the ILR40 permit conditions.

A segment of Buffalo Creek (GST) is in an approved TMDL water quality plan (Des Plaines River/Higgins Creek Watershed TMDL Report, dated May 2013).

A segment of the Des Plaines River (G-36) is identified on the IEPAs 303d list as impaired for primary recreational contact (fecal coliform), aquatic life (total phosphorus) and fish consumption (mercury and PCBs). No TMDL has been identified for this segment of the Des Plaines River in the Village.

A segment of Indian Creek (GU-02) is identified on the IEPAs 303d list as impaired for aquatic life (DO). No TMDL has been identified for this segment of Indian Creek in the Village.

The Village will monitor the progress of watershed work groups and the establishment of any applicable TMDLs or other Watershed Management Plans. The Village will continue the monitoring and evaluation program.

Measurable Goal(s), including frequencies:

The goal of this activity is to monitor receiving streams for potential changes due to the discharge of stormwater and ensure compliance with applicable TMDLs and Watershed Management Plans to reduce waste load allocations.

Milestones: **Year 15:** The Village will continue the monitoring and assessment program.

4. Construction Site Runoff Control

The Village will perform activities and services related to the Construction Site Runoff Control minimum control measure. BMPs will be implemented under BMP numbers D.1, D.2, D.4, D.5 and D.6 as described below.

BMP No. D.1

Brief Description of BMP:

The Village and County have ordinances in place to allow for review, inspection, and enforcement of construction site runoff controls.

Measurable Goal(s), including frequencies:

The Village will continue to review, inspect and enforce the ordinance regulations to prevent or reduce the discharge of sediment or other pollutants from construction sites.

Milestones: **Year 15:** The Village will enforce the regulatory procedures.

BMP No. D.2

Brief Description of BMP:

The Village and County have ordinances in place to allow for review, inspection, and enforcement of construction site runoff control BMP's.

Measurable Goal(s), including frequencies:

The Village will continue to review, inspect and enforce the ordinance regulations to prevent or reduce the discharge of sediment or other pollutants from construction sites as it relates to BMP's.

Milestones: **Year 15:** The Village will enforce the regulatory procedures.

BMP No. D.4

Brief Description of BMP:

The Village has procedures that proposed development plans to be reviewed for compliance.

Measurable Goal(s), including frequencies:

The Village will continue to require all developments to be reviewed for compliance with NPDES regulations and other Village ordinance standards.

Milestones: **Year 15:** The Village will enforce the review procedures.

BMP No. D.5

Brief Description of BMP:

The Village has produces in place for receiving, logging and addressing publicly reported issues.

Measurable Goal(s), including frequencies:

The Village will continue to respond to publicly reported issues in a timely manner and investigate as needed to address them.

Milestones: **Year 15:** The Village will respond accordingly.

BMP No. D.6

Brief Description of BMP:

The Village and County regulatory programs allow for inspection and enforcement procedures for construction site runoff control.

Measurable Goal(s), including frequencies:

The Village will continue to inspect all new developments for compliance with the Village and County ordinances.

Milestones: **Year 15:** The Village will enforce the ordinance.

5. Post-Construction Runoff Control

The Village will perform activities and services related to the Post-Construction Site Runoff Control minimum control measure. BMPs will be implemented under BMP number E.2, E.3, E.4, E.5 and E.6 as described below.

BMP No. E.2

Brief Description of BMP:

The Village and County have ordinances in place that allow for the review, inspection and enforcement of post-construction runoff control measures.

Measurable Goal(s), including frequencies:

The Village will continue to enforce the ordinances for compliance with post construction runoff controls to prevent or reduce the discharge of contaminants from construction sites.

Milestones: **Year 15:** The Village will enforce the ordinances.

BMP No. E.3

Brief Description of BMP:

The Village and County have procedures in place for assisting and evaluating the long term maintenance of stormwater best management practices.

Measurable Goal(s), including frequencies:

The Village will continue long term maintenance programs to assist developers and residents.

Milestones: **Year 15:** The Village will continue the long term maintenance program as indicated in ordinance.

BMP No. E.4

Brief Description of BMP:

The Village and County have procedures in place for the pre-construction review of BMP designs. These procedures include pre-application meetings for large scale developments.

Measurable Goal(s), including frequencies:

The Village will continue the review procedures and modify or evaluate as needed to maintain compliance.

Milestones: **Year 15:** The Village will continue the BMP review procedures.

BMP No. E.5

Brief Description of BMP:

The Village has procedures in place to perform site inspections during construction by qualified personnel.

Measurable Goal(s), including frequencies:

The Village will continue with the site inspections procedures to verify compliance of BMP's in reducing and/or preventing the discharge of contaminants to local waterways and storm sewers.

Milestones: **Year 15:** The Village will continue with the site inspection procedures.

BMP No. E.6

Brief Description of BMP:

The Village has procedures in place to perform site inspections post construction by qualified personnel.

Measurable Goal(s), including frequencies:

The Village will continue with the site inspections procedures to verify compliance of BMP's in reducing and/or preventing the discharge of contaminants to local waterways and storm sewers.

Milestones: **Year 15:** The Village will continue with the site inspection procedures.

6. Pollution Prevention/Good Housekeeping

This minimum control measure involves the development and implementation of an operation and maintenance program to reduce the discharge of pollutants from municipal operations. This program must include a training program for municipal employees. The Village will perform BMPs under BMP numbers F.1, F.2, F.3, F.4, F.5 and F.6 as described below.

BMP No. F.1

Brief Description of BMP:

Annually conduct formal stormwater pollution prevention training for Village employees on topics such as: dry weather observation of outfalls using the outfall reconnaissance inventory, illicit discharge tracing and source removal procedures, maintenance of green infrastructure (dry wells), and implementing the Spill Prevention, Control and Countermeasure (SPCC) Plan for Public Works Facility. Document the date, topic, and attendees for employee stormwater pollution prevention training.

Measurable Goal(s), including frequencies:

The Village will continue with the training program aimed at educating Village staff on ways to reduce or prevent stormwater pollution from Village activities.

Milestones: **Year 15:** The Village will continue with the training program.

BMP No. F.2

Brief Description of BMP:

Annually clean the Village storm sewers and storm sewer structures. Annually document the weight of debris removed from the Village storm sewer system.

Measurable Goal(s), including frequencies:

The Village will continue the inspection and maintenance program of stormwater facilities to reduce the amount of debris and pollutants that enter the stormwater system.

Milestones: **Year 15:** Continue the maintenance program.

BMP No. F.3

Brief Description of BMP:

The Village has procedures in place to reduce or prevent the discharge of contaminants to the stormwater system from municipal operations.

Measurable Goal(s), including frequencies:

The Village will continue to be proactive in evaluating municipal activities that could potentially introduce pollutants to the stormwater system and develop methods to reduce or prevent them.

Milestones: **Year 15:** The Village will continue with the municipal control measures and evaluate additional methods as needed.

BMP No. F.4

Brief Description of BMP:

The Village has procedures that require appropriate disposal of all wastes generated during municipal operations.

Measurable Goal(s), including frequencies:

The Village will continue with the disposal program and requirements to reduce or eliminate the release of pollutants from municipal operations.

Milestones: **Year 15:** The Village will continue with the municipal operations disposal program.

BMP No. F.5

Brief Description of BMP:

The Village, County and State have strict development regulations related to floodplain management and the evaluation of potential development in these areas.

Measurable Goal(s), including frequencies:

The Village will continue to enforce the requirements for potential development in special flood hazard areas.

Milestones: **Year 15:** The Village will continue to enforce the flood management requirements.

BMP No. F.6

Brief Description of BMP:

The Village regularly evaluates their municipal activities for additional ways to reduce or eliminate pollutants from entering the stormwater system including salt reduction, additional de-icing alternatives and other actions.

Measurable Goal(s), including frequencies:

The Village will continue to evaluate and develop methods or changes to existing practices that can reduce or eliminate pollutants from entering the stormwater system from municipal activities.

Milestones: **Year 15:** The Village will continue the evaluation and monitoring program.

Part E. Notice of Qualifying Local Program

The Village of Buffalo Grove enforces both the Lake County Watershed Development Ordinance and the MWRDGC Watershed Management Ordinance as well as the Village Ordinances. The Village has the authority to enforce the County Ordinances within the Village limits, including the Construction Site and Post-Construction Stormwater Runoff Control requirements. As the Village takes on this responsibility, it will assure that construction sites are meeting the ILR10 permit requirements as well as the County's Ordinance requirements. The Village will also evaluate its policy toward long-term maintenance of BMPs.

1. Public Education and Outreach:

The Village of Buffalo Grove developed a comprehensive program during the previous 10 year NOI permit period that provides Public Education and Outreach resources to its residents through printed materials and the Village website. The Village will continue this program and the associated activities.

This program relates to BMP numbers A.1, A.3, A.4 and A.6.

2. Public Participation/Involvement:

The Village has developed a comprehensive program to address the Public Participation/Involvement requirement developed during the initial 10 years of the NPDES Phase II permit.

These programs relate to BMP numbers B.2, B.3, B.6 and B.7.

3. Illicit Discharge Detection and Elimination:

The Village enforces a comprehensive program to address the Illicit Discharge Detection and Elimination requirements of the NPDES Phase II program. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP numbers C.1, C.2, C.3, C.4, C.5, C.6, C.7 and C.8.

4. Construction Site Runoff Control:

The Village enforces the County Ordinance within the Village limits, including the Construction Site and Post-Construction Stormwater Runoff Control requirements.

These programs relate to BMP numbers D.1, D.2, D.4, D.5 and D.6.

5. Post-Construction Runoff Control:

The Village enforces the County Ordinance within the Village limits, including the Construction Site and Post-Construction Stormwater Runoff Control requirements.

These programs relate to BMP numbers E.2, E.3, E.4, and E.5.

6. Pollution Prevention/Good Housekeeping:

The goal of this BMP is to identify current practices that contribute to stormwater pollution and implement programs and procedures for municipal activities that curtail the discharge of pollutants to storm sewer systems. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP number F.1, F.2, F.3, F.4, F.5 and F.6.

Part E. Notice of Qualifying Local Program

The Lake County Stormwater Management Commission (SMC) serves as a Qualifying Local Program (QLP) for MS4s in Lake County. In accordance with IEPA's General NPDES Permit No. ILR40, as a QLP, SMC performs activities related to each of the six minimum control measures. This part of the Annual Report, which summarizes the stormwater management activities performed by SMC as a QLP, consists of the following five sections:

- **Part E1** identifies changes to Best Management Practices (BMPs) that occurred during Year 14 and includes information about how these changes affected the QLP's stormwater management program.
- **Part E2** describes the stormwater management activities that the QLP performed during Year 14.
- **Part E3** summarizes the information and data collected by the QLP during Year 14.
- **Part E4** describes the stormwater management activities that the QLP plans to undertake during Year 15.
- **Part E5** lists the construction projects conducted by the QLP during Year 14.

Part E1. QLP Changes to Best Management Practices, Year 14

Note: “X” indicates BMPs that were implemented as planned

✓ indicates BMPs that were changed during Year 14

Year 14	
QLP	
A. Public Education and Outreach	
X	A.1 Distributed Paper Material
	A.2 Speaking Engagement
X	A.3 Public Service Announcement
X	A.4 Community Event
X	A.5 Classroom Education Material
X	A.6 Other Public Education
B. Public Participation/Involvement	
X	B.1 Public Panel
	B.2 Educational Volunteer
X	B.3 Stakeholder Meeting
	B.4 Public Hearing
	B.5 Volunteer Monitoring
X	B.6 Program Coordination
	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination	
	C.1 Storm Sewer Map Preparation
X	C.2 Regulatory Control Program
	C.3 Detection/Elimination Prioritization Plan
	C.4 Illicit Discharge Tracing Procedures
	C.5 Illicit Source Removal Procedures
	C.6 Program Evaluation and Assessment
	C.7 Visual Dry Weather Screening
	C.8 Pollutant Field Testing
	C.9 Public Notification
X	C.10 Other Illicit Discharge Controls

Year 14	
QLP	
D. Construction Site Runoff Control	
X	D.1 Regulatory Control Program
X	D.2 Erosion and Sediment Control BMPs
X	D.3 Other Waste Control Program
X	D.4 Site Plan Review Procedures
X	D.5 Public Information Handling Procedures
X	D.6 Site Inspection/Enforcement Procedures
	D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control	
	E.1 Community Control Strategy
X	E.2 Regulatory Control Program
X	E.3 Long Term O&M Procedures
X	E.4 Pre-Const Review of BMP Designs
X	E.5 Site Inspections During Construction
X	E.6 Post-Construction Inspections
X	E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping	
X	F.1 Employee Training Program
	F.2 Inspection and Maintenance Program
	F.3 Municipal Operations Storm Water Control
	F.4 Municipal Operations Waste Disposal
X	F.5 Flood Management/Assess Guidelines
✓	F.6 Other Municipal Operations Controls

Part E2. QLP Status of Compliance with Permit Conditions, Year 14

IEPA issued a new version of its General NPDES Permit No. ILR40 effective March 1, 2016 (the first day of Year 14). SMC has reviewed the new permit, compared it to the previous permit, summarized the changes, and evaluated what the changes appear to mean for Lake County MS4s. Based on these findings, SMC revised its SMPP template and provided it to communities in August 2016; the final draft was provided in November 2016.

The Lake County Stormwater Management Commission (SMC) serves as a Qualifying Local Program (QLP) for MS4s in Lake County. In accordance with IEPA's NPDES General Permit No. ILR40, as a QLP, SMC performs activities related to each of the six minimum control measures. The stormwater management activities that the QLP performed during Year 14 are described below.

A. Public Education and Outreach

A.1 Distributed Paper Material

Measurable Goal(s):

- Distribute informational materials from “take away” rack at SMC. Upon request, distribute materials directly to municipalities for local distribution.

Year 14 QLP activities:

- SMC distributes a variety of informational materials related to stormwater management through its “take away” rack and website.
- Upon request, informational materials are distributed directly to Lake County MS4s in PDF format for use on community websites, in community newsletters, and in community “take away” racks.
- In 2016, SMC developed “Living on the Water’s Edge” which included prevention pollution and bio infiltration practices for riparian landowners. This was widely distributed electronically (<https://lakecountyil.gov/DocumentCenter/View/11146>) as well as in print form.
- Provided NPDES related information via Facebook

A.3 Public Service Announcement

Measurable Goal(s):

- Include public service announcement highlighting community accomplishments related to IEPA's NPDES Stormwater Program in “[Mainstream](#)” once annually;
- Post watershed identification signage with LCDOT;
- Upon request or download “[The Big Picture: Water Quality, Regulations & NPDES](#)” to Lake County MS4s.

Year 14 QLP activities:

- SMC includes announcements highlighting community accomplishments related to IEPA's NPDES Stormwater Program on its website, in its newsletter, and through other media outlets.
- Watershed identification signage is located throughout the county.
- SMC continues to make available “[The Big Picture: Water Quality, Regulations & NPDES](#)” presentation to Lake County MS4s,

(url: <https://lakecountyil.gov/DocumentCenter/View/16533>).

A.4 Community Event

Measurable Goal(s):

- Sponsor or co-sponsor workshop on a topic related to IEPA's NPDES Stormwater Program.

Year 14 QLP activities:

- SMC sponsored or co-sponsored many workshops and events on stormwater-related topics between March 1, 2016 and February 28, 2017, including:
 - Municipal Pollution Prevention/Good Housekeeping: Indiana & California Indiana Perspectives at April 2016 MAC meeting
 - Presentations at April, June, September 2016 MAC meetings regarding new ILR40 permit, its implications and SMCs guidance on compliance.
 - Center for Watershed Protection stormwater webinars (March, May, June, September, October, November 2016)
 - Homeowners Association Workshop on maintaining stormwater BMPs at CLC May 2016
 - Fox River/Chain O'Lakes river clean-up in Fox Lake, Port Barrington & Antioch, IL on May 7, 2016
 - Chicago River clean-up (Chicago River Day) in Lincolnshire, Highland Park, Lake Forest & Deerfield, IL on May 14, 2016
 - Buffalo Creek clean-up (Rylko Community Park Workday) in Buffalo Grove, IL on May 20, 2016
 - Rain Barrel, Compost Bin, and Native Plant Sale held in Libertyville, IL on May 7, 2016
 - Roadway De-Icing Workshop held in Libertyville, IL on Oct. 3 & 5, 2016
 - Parking Lots & Sidewalks De-Icing Workshop held in Libertyville, IL on October 4, 2016
 - Green Infrastructure workshop for Highland Park District Supervisors and Staff February 11, 2016
 - Des Plaines River Watershed Presentation at Adlai Stevenson Center on Democracy Oct. 13, 2016
 - SMC sponsored a Designated Erosion Control Inspector (DECI) Workshop held on Jan. 5/2017

A.5 Classroom Education

Measurable Goal(s):

- Develop and compile information for stormwater educational kit for distribution upon request.
- Provide materials and training on storm sewer inlet stenciling kits to teachers upon request.

Year 14 QLP activities

- Stormwater educational materials were compiled for use at several public education events that were held between March 1, 2016 and March 31, 2017, including:

- Riparian Landowner Open House held in Beach Park, IL on May 25, 2016
- Loch Lomond Property Owners Association's Loch Fest held in Mundelein, IL on July 30, 2016
- Rain Barrel, Compost Bin, and Native Plant Sale held in Libertyville, IL on May 7, 2016
- Developed Deicing Residential & Commercial Informational Brochure
- Developed "Living on the Water's Edge" Brochure used for multiple events, including Des Plaines River watershed planning meetings, watershed meetings, LCHD lakes committee meetings, etc.

A.6 Other Public Education

Measurable Goal(s):

- Maintain and update the portion of the SMC website dedicated to IEPA's NPDES Stormwater Program with resource materials such as model ordinances, case studies, brochures and web links.
- Make "[The Big Picture: Water Quality, Regulations & NPDES](#)" presentation available to Lake County MS4s.

Year 14 QLP activities:

- As new information and resource materials become available, they are posted to the SMC website and/or distributed directly to Lake County MS4s, (url:<https://lakecountyil.gov/2479/NPDES-Phase-II>).
- SMC continues to make available "The Big Picture: Water Quality, Regulations & NPDES" presentation to Lake County MS4s, (url:<https://lakecountyil.gov/DocumentCenter/View/16533>).
- SMC developed an ArcGIS geospatial web tool for Lake County that indicates TMDL statuses, 303(b), 305(d), watershed and urbanized area information within an MS4, (url:<https://lakecountyil.maps.arcgis.com/apps/InformationLookup/index.html?appid=09ab978957e7499f9926805d29e9394a>).
- SMC developed an ArcGIS geospatial web tool for Lake County within the Des Plaines River watershed, allowing the public to see an [Inventory of Stream and Detention Basin](#) Information, (url: <https://lakecountyil.maps.arcgis.com/apps/webappviewer/index.html?id=918c4042dcec431ba46b5c1a7030b46c&extent=-9835848.6057,5176480.893,-9738009.2095,5239847.1894,102100>).
- SMC maintains reference documents for stormwater best practices, BMPs and green infrastructure practices on its website, (url: <https://lakecountyil.gov/2261/Stormwater-Best-Practices>).

B. Public Participation/Involvement

B.1 Public Panel

Measurable Goal(s):

- Provide notice of public meetings on SMC website. Track number of meetings conducted.

Year 14 QLP activities:

- Notice of all public meetings continues to be provided on the SMC website and through direct mailings and e-mailings to distribution lists.
- SMC tracked the number of Stormwater Management Committee Board (SMC) meetings, Technical Advisory Committee (TAC) meetings, Municipal Advisory Committee (MAC), and Watershed Management Board (WMB) meetings conducted during Year 14, between March 1, 2016 and March 31, 2017.
 - Per records, there were 10 SMC meetings, 0 TAC meetings, 4 MAC meetings, and 1 WMB meeting conducted during this reporting period.

B.3 Stakeholder Meeting

Measurable Goal(s):

- Provide notice of stakeholder meetings on SMC website.
- Track number of watershed planning committee meetings conducted.
- Establish watershed planning committees for each new watershed planning effort.

Year 14 QLP activities:

- Notice of all stakeholder meetings continues to be provided on the SMC website and through direct mailings and e-mailings to stakeholder lists.
- SMC tracked the number of stakeholder meetings conducted for the various watershed planning committees during the reporting period. The list below summarizes the watershed planning committee meetings that were conducted during Year 14:
 - North Branch Chicago River Planning Committee – 3
 - Bull Creek/Bull's Brook Watershed Council – 2
 - Buffalo Creek Clean Water Partnership – 1
 - Des Plaines Watershed Planning Committee – 10
 - Des Plaines River Watershed Workgroup – 15 (excluding executive board meetings)
- SMC continues to establish and/or assist watershed planning committees for each new watershed planning effort.

B.6 Program Coordination

Measurable Goal(s):

- Track number of MAC meetings conducted during Year 14.
- Prepare annual report on Qualifying Local Program activities at end of Year 14.

Year 14 QLP activities:

- SMC tracked the number of Municipal Advisory Committee (MAC) meetings conducted during Year 14: According to records, there were 3 MAC meetings conducted during this reporting period. 4/6/16, 6/8/16, 9/14/16
- The stormwater management activities that SMC performed as a QLP during Year 14 are described in the Annual Facility Inspection Report (i.e., Annual Report) template provided to Lake County MS4s.
- The stormwater management activities that SMC plans to perform as a QLP during Year 15 are described in Part E4 of the Annual Report template.
- A detailed QLP section was added to the SMPP template describing the QLP commitments related to the implementation of the program.

C. Illicit Discharge Detection and Elimination

C.2 Regulatory Control Program

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.
- Lake County continues to provide [the Lake County Illicit Discharge Detection and Elimination \(IDDE\) Manual](https://lakecountyil.gov/DocumentCenter/View/17264) on the SMC website, (url: <https://lakecountyil.gov/DocumentCenter/View/17264>)

C.10 Other Illicit Discharge Controls

Measurable Goal(s):

- Sponsor or co-sponsor and track the number of attendees at an Illicit Discharge Detection and Elimination workshop or other training workshop related to IEPA's NPDES Stormwater Program.

Year 14 QLP activities:

- SMC sponsored or co-sponsored many workshops and events on stormwater-related topics between March 1, 2016 and February 28, 2017. Such workshops and events are described above.

D. Construction Site Runoff Control

D.1 Regulatory Control Program

Measurable Goal(s):

- Continue to enforce the countywide WDO.
- Administer the Designated Erosion Control Inspector (DECI) program outlined by the WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.
- SMC continues to administer the Designated Erosion Control Inspector (DECI) program as outlined by the WDO, (url: <https://lakecountyil.gov/2470/Designated-Erosion-Control-Inspector-Pro>).

- Total DECIIs who have passed the exam (to date): 1,356.
- DECIIs who have passed the exam between 03/01/2016 – 02/28/2017: 34.
- Total listed DECIIs (to date): 139 (DECI completed certification process).
- DECIIs have a recertification process every (3) years. Current cycle 2017-2020.

D.2 Erosion and Sediment Control BMPs

Measurable Goal(s):

- Continue to enforce the countywide WDO.
- Complete TRM update and work toward final approval and publication of the document.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.
- SMC continues to provide technical guidance and reference materials to support the administration and enforcement of the countywide WDO.

D.3 Other Waste Control Program

Measurable Goal(s):

- Enforce WDO provisions regarding the control of waste and debris at construction sites.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

D.4 Site Plan Review Procedures

Measurable Goal(s):

- Track number of enforcement officers who have passed the exam.
- Track number of communities that undergo a performance review.
- Complete ordinance administration and enforcement chapter of TRM.

Year 14 QLP activities:

- SMC continues to track the number of enforcement officers (EOs) who have passed the EO exam and have become EOs. Per records, as of the end of Year 14, there are 57 EOs certified in Lake County.
- The list of EOs representing Certified Communities is continually updated and maintain on the SMC website:
(url:<https://lakecountyil.gov/DocumentCenter/View/14412>).
- SMC last completed a cycle of the community re-certification process, which included a performance review of all 53 certified and non-certified communities, during a previous reporting period (i.e., Year 9). In accordance with the amended countywide WDO, the certification process is every 5 years the next cycle of the community re-certification process is scheduled to begin in fall/winter 2017.
(url: <https://lakecountyil.gov/2459/Community-Certification>)
- The website includes guidance information to supplement the TRM related to WDO interpretation as well as ordinance administration and enforcement.

D.5 Public Information Handling Procedures

Measurable Goal(s):

- Track number of complaints received and processed related to soil erosion and sediment control.

Year 14 QLP activities:

- SMC continues to track the number of complaints received and processed related to soil erosion and sediment control.
- According to records, between March 1, 2016 and March 31, 2017, 2 SE/SC complaints were received and processed by SMC staff.

D.6 Site Inspection/Enforcement Procedures

Measurable Goal(s):

- Track number of site inspections conducted by SMC.

Year 14 QLP activities:

- SMC continues to track the number of site inspections conducted by SMC staff.
- According to records, between March 1, 2016 and March 31, 2017, 756 site inspections were conducted by SMC staff.

E. Post-Construction Runoff Control

E.2 Regulatory Control Program

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

E.3 Long Term O&M Procedures

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

E.4 Pre-Construction Review of BMP Designs

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

E.5 Site Inspections During Construction

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

E.6 Post-Construction Inspections

Measurable Goal(s):

- Continue to enforce the countywide WDO.

Year 14 QLP activities:

- SMC continues to enforce the countywide WDO.

E.7 Other Post-Construction Runoff Controls

Measurable Goal(s):

- Conduct annual Watershed Management Board (WMB) meeting.
- Contribute funding to flood reduction and water quality improvement projects, including stormwater retrofits, through the WMB.

Year 14 QLP activities:

- The annual WMB meeting was held on Dec. 8, 2016.
- At the annual WMB meeting 13 Projects were selected to receive \$177,000 of funding through the SMC grant program. These projects including planning and in the ground project efforts that support flood reduction, water quality improvement, and stormwater retrofit projects.
 - 11 WMB project grants awarded
 - 1 Stormwater Infrastructure Repair Fund (SIRF) project grant awarded
 - 1 Watershed Management Assistance (WMAG) project grant awarded

F. Pollution Prevention/Good Housekeeping

F.1 Employee Training Program

Measurable Goal(s):

- Provide list of available resources to MS4s.
- Sponsor or co-sponsor employee training workshops or events.
 - Make available the Excal Visual Municipal Storm Water Pollution Prevention Storm Watch Everyday Best Management Practices training video and testing.

Year 14 QLP activities:

- SMC continues to provide information on training opportunities and training resources to Lake County MS4s.
- SMC sponsored or co-sponsored a number of workshops and events on stormwater-related topics between March 1, 2016 and February 28, 2017. Such workshops and events are described above.
- SMC continues to make available the Excal Visual Storm Watch Municipal Stormwater Pollution Prevention software to Lake County MS4s. According to records, between March 1, 2016 and February 28, 2017, 1 MS4 borrowed the Excal Visual software. (url: <http://lakecountylil.gov/2479/NPDES-Phase-II>)
- SMC staff participated in Pollution Modeling Workshop Dec 12, 2016 at CMAP

F.5 Flood Management/Assess Guidelines

Measurable Goal(s):

- Track number of projects that are reviewed for multi-objective opportunities.

Year 14 QLP activities:

- SMC continues evaluate all SMC-sponsored projects for multi-objective opportunities, such as flood control and water quality.

F.6 Other Municipal Operations Controls

Winter Roadway Deicing

Measurable Goal(s):

- Advise MS4 communities of watershed groups addressing issues associated with the use of chlorides (i.e. road salt)

Year 14 QLP activities:

- SMC co-sponsored 2 de-icing workshops:
 - Deicing for Parking Lots and Sidewalks 10/4/2016
 - Deicing Roads 10/5/2016
- A de-icing certification process to promote trained vendors is offered
 - Preferred Providers that successfully completed a Lake County Deicing Training Workshop and passed the Course Exam can be referenced on a Preferred Provider List (url: <https://www.lakecountyl.gov/DocumentCenter/Home/View/10767>)
 - Certification is through a third-party vendor, Fortin Consulting, Inc
- SMC continues to make available chloride reduction documents
 - Too Much Salt in Our Winter Maintenance Recipe - Tips for Managing Snow and Ice at Home (PDF) (url: <https://lakecountyl.gov/DocumentCenter/Home/View/3047>)
 - Lake County Winter Parking Lot and Sidewalk Maintenance Manual (2015) (PDF) (url: <https://lakecountyl.gov/DocumentCenter/Home/View/3044>)
 - Less Salt Equals Less Money, Clean Water, Safe Conditions - Tips for Effective Road Salting (PDF) (url: <https://lakecountyl.gov/DocumentCenter/Home/View/3045>)

Part E3. QLP Information and Data Collection Results, Year 14

The QLP did not collect any monitoring data on behalf of Lake County's MS4s during Year 14. However, SMC has reviewed information presented by the [Illinois EPA \(IEPA\) in the 2016 Illinois Integrated Water Quality Report and 303\(d\) List](#) and has developed the brief "State of Lake County's Waters" report provided below.

State of Lake County's Waters March 2017

This brief report is based on information contained in the Illinois EPA's 2016 Illinois Integrated Water Quality Report (IIWQR) and Section 303(d) List, dated July 2016. Its purpose is to provide basic information to Lake County's MS4 communities on the condition of surface waters within Lake County. More detailed information about the condition of surface waters in Lake County can be found in the Illinois EPA's 2016 Illinois Integrated Water Quality Report and Section 303(d) List.

The Illinois EPA's 2016 IIWQR and Section 303(d) List assesses the condition of surface water within streams, inland lakes and Lake Michigan waters. The IEPA assessment of surface water conditions is based on a degree of support (attainment) of a designated use within a stream segment, inland lake or within Lake Michigan. Determination designation is through an analysis of various types of information: including biological, physicochemical, physical habitat, and toxicity data. Illinois waters are designated for various uses including aquatic life, wildlife, agricultural use, primary contact (e.g., swimming, water skiing), secondary contact (e.g., boating, fishing), industrial use, public and food-processing water supply, and aesthetic quality. When sufficient data is available the IEPA assesses each applicable designation as Fully Supporting (Good resource quality), Not Supporting (Fair or Poor resource quality), Not Assessed or Insufficient Information. Uses determined to be Not Supporting are called "impaired," and waters that have at least one use assessment as Not Supporting are also called impaired as designated within the 303(d) list.

Streams

An analysis of data accompanying the Illinois EPA's 2016 IIWQR and Section 303(d) List shows that 179.68 stream miles in Lake County have been assessed by the Illinois EPA for attainment of at least one designated use per the IIWQR Appendix B-2. Specific Assessment Information for Streams, 2016.

An analysis of data accompanying the Illinois EPA's 2016 Illinois Integrated Water Quality Report and Section 303(d) List shows that 157.84 stream miles (of the 179.68 stream miles that have been assessed) in Lake County are considered impaired by the Illinois EPA. These stream segments have been mapped and are shown in Figure E3.1.

An analysis of the 2014 impaired streams to the 2016 impaired streams, indicates 8 stream miles previously listed in the 2014 303(d) list have new data indicating aquatic life is now "Fully Supported" and applicable water quality standards have been attained; these water are no longer

included in the 2016 303(d) list. The IIWQR mentions there is no specified reason for the recovery.

Table E3.1 2014 303(d) streams removed from 2016 303(d) list					
Assessment ID	Name	Miles	Assessment ID	Name	Miles
IL_G-08	Des Plaines River	0.98	IL_QE-01	Dead Dog Creek	4.02
IL_GV-01	Bull Creek	2.33	IL_DTZS-01	Flint Creek	9.66
IL_RGZB	Hastings Lake	0.34	IL_RTJ	Long Lake	2.85
IL_DT-35	Fox River	5.03	IL_RHK	Eleanor Lake	0.36
IL_HCCB-05	West Fork North Branch	5.73	IL_GWA	North Mill Creek	6.62
IL_GST	Buffalo Creek	8.77	IL_RGZE	Slough Lake	0.42
IL_RGZA	Crooked Lake	1.00			

An analysis of the 2014 impaired streams to the 2016 impaired streams indicates 27 stream miles previously not listed in the 2014 303(d) list are now considered impaired in the 2016 303(d) list as new data indicates impairments.

Table E3.2 Stream Segments added to 2016 303(d) list not previously listed in 2014					
Assessment ID	Name	Miles	Assessment ID	Name	Miles
IL_HCCB-05	West Fork North Branch Chicago River	0.002	IL_QC-03	Waukegan River	1.47
IL_DTRA-W-C1	Fiddle Creek	0.003	IL_GU-02	Indian Creek	11.32
IL_GW-02	Mill Creek	12.96	IL_QA-C4	Pettibone Creek	1.24

Lakes

An analysis of data accompanying the Illinois EPA's 2016 IIWQR and Section 303(d) List shows that 170 inland lakes in Lake County have been assessed by the Illinois EPA for attainment of at least one designated use per the IIWQR Appendix B-3. Specific Assessment Information for Lakes, 2016.

An analysis of data accompanying the Illinois EPA's 2016 IIWQR and Section 303(d) List shows that 140 inland lakes, of the 170 assessed, in Lake County are considered impaired by the Illinois EPA. These lakes have been mapped and are shown in Figure E3.1.

An analysis of the 2014 impaired lakes to the 2016 impaired lakes indicates 5 lakes previously not listed in the 2014 303(d) list are now considered impaired in the 2016 303(d) list as new data indicates impairments.

Table E3.3 Inland Lakes added to 2016 303(d) list not previously listed in 2014					
Assessment ID	Name	Acres	Assessment ID	Name	Acres
IL_RGZD	Miltmore	83.1	IL_VGW	Rollins Savanna #1	8
IL_RGK	Grays	80	IL_VGX	Rollins Savanna #2	53
IL_SGZ	Briarcrest Pond	4			

Lake Michigan

Lake Michigan is monitored by the Illinois EPA through the Lake Michigan Monitoring Program. Bordering Cook and Lake Counties, the State of Illinois has jurisdiction over approximately 1,526 square miles of open water, 13 harbors, and 64 shoreline miles of Lake Michigan.

Located within Illinois is 196 square miles of open water of Lake Michigan, or about thirteen percent of the total open water located within Illinois. These waters were assessed for the 2016 IIWQR and Section 303(d) List, and all 196 assessed square miles were rated as Fully Supporting for the following uses: aquatic life use, primary contact use, secondary contact use, and public and food processing water supply use. However, fish consumption use in all 196 assessed square miles of open water was rated as Not Supporting due to contamination from polychlorinated biphenyls (PCBs) and mercury. Additionally, aesthetic quality use in all 196 assessed square miles of open water was rated as Not Supporting due to exceedances of the Lake Michigan open water standard for total phosphorus. It should be noted that such exceedances do not necessarily indicate that there are offensive conditions in Lake Michigan due to excessive algal or aquatic plant growth.

Along Illinois' Lake Michigan coastline, four of the 13 harbors are currently assessed in the 2016 IIWQR and Section 303(d) List, for several different designated uses. The Illinois EPA uses data collected from the Lake Michigan Monitoring Program harbor component to assess water quality for the following designated uses:

- Aesthetic Quality, a 0.18 sq. mi area was assessed, with 0.12 sq. mi fully supporting and 0.06 sq. mi Not Supporting (poor).
- Aquatic Life, a 3.88 sq. mi area was assessed, with 3.82 sq. mi fully supporting and 0.06 sq. mi Not Supporting (poor).
- Fish Consumption, a 2.62 sq. mi area was assessed, with 2.62 sq. mi Not Supporting (poor).
- Primary and Secondary Contact were not assessed.

Table C-10 of the IIWQR, lists potential causes of impairment in the harbors of Lake Michigan that can include Pesticides, Organic Pollutants, Metal Pollutants as well as polychlorinated biphenyls (PCBs), mercury, bottom deposits, lead, zinc, cadmium, arsenic, phosphorus, copper, and chromium.

Along Illinois' Lake Michigan coastline, a portion of all 64 shoreline miles of Lake Michigan located in Illinois were assessed for the Illinois EPA's 2016 IIWQR and Section 303(d) List for several different designated uses. Contamination sources for Not Supporting is due to polychlorinated biphenyls (PCBs) and mercury and bacterial contamination from Escherichia coli (E. coli) bacteria.

- Aesthetic Quality and Aquatic Life were not assessed.
- Fish Consumption, 64 mi area was assessed, with 64 mi Not Supporting (poor).
- Primary Contact, 64 mi area was assessed, with 5.5 mi fully supporting and 58.5 mi Not Supporting (poor).
- Secondary Contact, 5.5 mi area was assessed, with 5.5 mi fully supporting

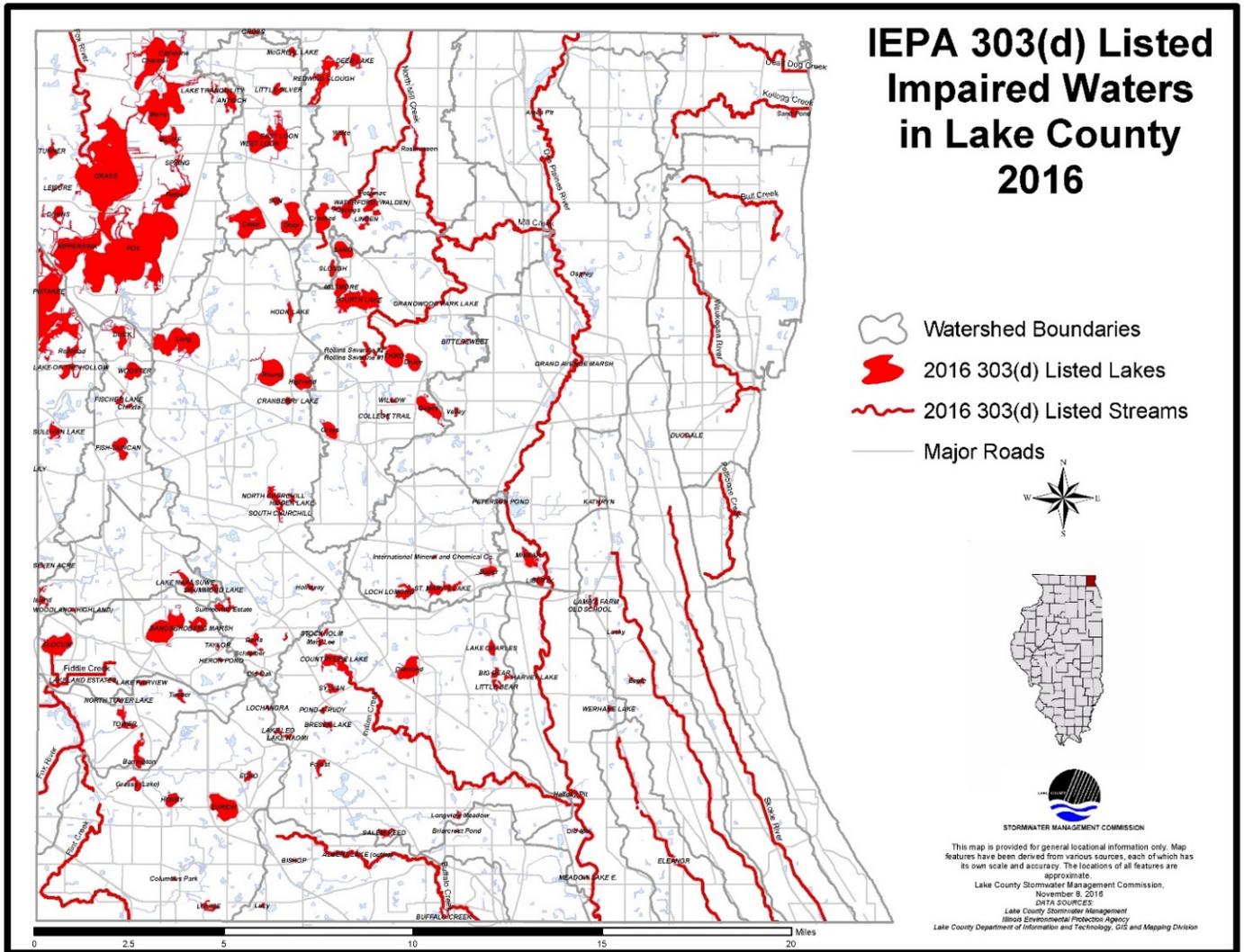


Figure E3.1

In addition to the information contained within the 303(b) and 303(d) reports, the Des Plaines River Watershed Workgroup (DRWW) founded in 2014, on behalf of its members, monitors water quality in the Des Plaines River and tributaries, prioritize and implement water quality improvement projects, and secure grant funding to offset the cost. Monitoring data will allow for a greater understanding of the water quality impairments, identify priority restoration activities, and track water quality improvements. The Workgroup is committed to an approach for attaining water quality standards that focuses on stakeholder involvement, monitoring, and locally led decision-making based on sound science. Comprehensive baseline monitoring has been completed at 69 sites for water chemistry, sediment chemistry and biology. Flow monitoring began in late 2016. An annual water chemistry monitoring report was submitted to IL EPA in March 2017, which covers the NPDES II monitoring requirements for MS4 communities that are DRWW members. A Des Plaines River Watershed monitoring strategy was completed in

February 2016 and updated in March 2017; a monitoring program report is intended to be submitted to IEPA by January 31, 2018.

The LCHD Lakes Management Unit has been collecting water quality data on Lake County lakes since the late 1960s. Since 2000, 176 different lakes each year have been studied and data collected on temperature, dissolved oxygen, phosphorus, nitrogen, solids, pH, alkalinity, chloride, conductivity, water clarity, the plant community and shoreline characteristics. Lake summary reports can be found <https://www.lakecountyl.gov/2400/Lake-Reports>. This data is used as part of ongoing watershed planning efforts throughout the county, which result in specific programmatic and site specific recommendations throughout the county. SMC is currently developing an application to assist communities in identifying potential site specific recommendations within their jurisdictional boundaries.

Part E4. QLP Summary of Year 15 Stormwater Activities

The table below indicates the stormwater management activities that the QLP plans to undertake during Year 15. Additional information about the BMPs and measurable goals that the QLP will implement during Year 15 is provided in the section following the table.

Note: X indicates BMPs that will be implemented during Year 15

Year 15	
QLP	
A. Public Education and Outreach	
X	A.1 Distributed Paper Material
X	A.2 Speaking Engagement
X	A.3 Public Service Announcement
X	A.4 Community Event
X	A.5 Classroom Education Material
X	A.6 Other Public Education
B. Public Participation/Involvement	
X	B.1 Public Panel
	B.2 Educational Volunteer
X	B.3 Stakeholder Meeting
	B.4 Public Hearing
	B.5 Volunteer Monitoring
X	B.6 Program Coordination
	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination	
	C.1 Storm Sewer Map Preparation
X	C.2 Regulatory Control Program
	C.3 Detection/Elimination Prioritization Plan
	C.4 Illicit Discharge Tracing Procedures
	C.5 Illicit Source Removal Procedures
	C.6 Program Evaluation and Assessment
	C.7 Visual Dry Weather Screening
	C.8 Pollutant Field Testing
	C.9 Public Notification
X	C.10 Other Illicit Discharge Controls

Year 15	
QLP	
D. Construction Site Runoff Control	
X	D.1 Regulatory Control Program
X	D.2 Erosion and Sediment Control BMPs
X	D.3 Other Waste Control Program
X	D.4 Site Plan Review Procedures
X	D.5 Public Information Handling Procedures
X	D.6 Site Inspection/Enforcement Procedures
	D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control	
	E.1 Community Control Strategy
X	E.2 Regulatory Control Program
X	E.3 Long Term O&M Procedures
X	E.4 Pre-Const Review of BMP Designs
X	E.5 Site Inspections During Construction
X	E.6 Post-Construction Inspections
X	E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping	
X	F.1 Employee Training Program
	F.2 Inspection and Maintenance Program
	F.3 Municipal Operations Storm Water Control
	F.4 Municipal Operations Waste Disposal
X	F.5 Flood Management/Assess Guidelines
X	F.6 Other Municipal Operations Controls

The Lake County Stormwater Management Commission (SMC) is a Qualifying Local Program for MS4s in Lake County. SMC has been providing services under four of the six minimum control categories since it began implementing a comprehensive, countywide stormwater program in 1991. The revised SMPP template clarifies and emphasizes the significant efforts by SMC related to each of the six minimum control measures. These QLP commitments provide

Lake County with a baseline Countywide stormwater management program that can be built upon by each of the individual MS4s.

During Year 15, SMC remains committed to performing a variety of stormwater management activities across the County, these commitments are now specifically outlined in the SMPP template. SMC program is continually evolving, to better assist Lake County MS4s in meeting the requirements of the new 2016 MS4 Permit.

A. Public Education and Outreach

SMC will continue to support Lake County MS4s in the development and implementation of their stormwater management programs by performing activities related to the Public Education and Outreach minimum control measure, as described below.

A.1 Distributed Paper Material

SMC compiles, develops, and distributes throughout Lake County a variety of materials related to stormwater management.

Measurable Goal(s):

- Develop and Distribute informational materials from “take away” rack at SMC.
- Upon request, distribute informational materials directly to Lake County MS4s for local distribution.

A.2 Speaking Engagement

SMC provides educational presentations related to IEPA’s NPDES Stormwater Program on a regular basis at Municipal Advisory Committee (MAC) meetings. Upon request, SMC will provide educational presentations related to IEPA’s NPDES Stormwater Program to Lake County MS4s.

Measurable Goal(s):

- Provide educational presentations related to IEPA’s NPDES Stormwater Program at MAC meetings.
- Upon request, provide educational presentations related to IEPA’s NPDES Stormwater Program (e.g., “[The Big Picture: Water Quality, Regulations & NPDES](#)”) to Lake County MS4s.

A.3 Public Service Announcement

SMC performs extensive Social Media Outreach & Announcement Activities. Public service announcement related to IEPA’s NPDES Stormwater Program or Stormwater BMPs are included in SMC’s watershed E-News. SMC also utilizes social media and coordinates with the Lake County Department of Transportation (LCDOT) to post watershed identification signage in watersheds where watershed planning activities have occurred or are occurring.

Measurable Goal(s):

- Include public service announcements related to IEPA's NPDES Stormwater Program or stormwater BMPs in watershed E-News at least once each year.
- Post watershed identification signage in cooperation and collaboration with LCDOT.
- Provide information via social media (Facebook and Twitter).

A.4 Outreach Events

SMC sponsors and co-sponsors educational and technical training workshops on a variety of stormwater management-related topics. Each year, SMC will sponsor or co-sponsor at least one workshop on a topic related to IEPA's NPDES Stormwater Program, such as soil erosion and sediment control, illicit discharge detection and elimination, or stormwater best management practices (BMPs) that can be used to protect and improve water quality.

Measurable Goal(s):

- Sponsor or co-sponsor workshop on stormwater-related topics.
- Track workshops and events.

A.5 Classroom Education Material

Upon request, SMC will contribute to the development and compilation of material for inclusion in a stormwater education kit that can be distributed to local students and teachers and/or other local stakeholders. Additionally, upon request, SMC will provide information, materials, and training to local students and teachers and/or other local stakeholders interested in conducting storm drain stenciling.

Measurable Goal(s):

- Upon request, develop and compile materials for inclusion in a stormwater education kit.
- Upon request, provide information, materials, and training to local students and teachers and/or stakeholders interested in conducting storm drain stenciling.

A.6 Other Public Education

SMC maintains a website that contains a variety of materials and resources related to stormwater management. The website provide information about IEPA's NPDES Stormwater Program, provide information about stormwater best management practices (BMPs), allow for download of stormwater management-related publications and documents, provide notices of upcoming meetings and ongoing projects, includes watershed plans and watershed workgroup information, and provide links to a number of other stormwater management-related resources

Measurable Goal(s):

- Maintain and update the portion of the SMC website dedicated to IEPA's NPDES Stormwater Program with resources such as model ordinances, case studies, brochures, and links including information related to climate change.
- Make "The Big Picture: Water Quality, Regulations & NPDES" presentation available to Lake County MS4s.

B. Public Participation/Involvement

SMC will continue to support Lake County MS4s in the development and implementation of their stormwater management programs by performing activities related to the Public Participation/Involvement minimum control measure, as described below.

B.1 Public Panel

SMC provides procedural guidance and implements its Citizen Inquiry Response System (CIRS) for receiving and taking action on information provided by the public regarding post-construction stormwater runoff control. SMC coordinates and conducts public meetings as well as committee meetings that are open to the public.

Measurable Goal(s):

- Implement and provide guidance on existing CIRS procedures.
- Provide notice of public meetings on SMC website.
- Track number of meetings conducted

B.3 Stakeholder Meeting

SMC is actively involved in watershed planning throughout Lake County. SMC believes that the watershed planning process cannot happen and will not be successful without the input, interest, and commitment of the watershed stakeholders. Watershed stakeholders may include municipalities, townships, drainage districts, homeowner associations, lakes management associations, developers, landowners, and local, county, state, and federal agencies.

Measurable Goal(s):

- Provide notice of stakeholder meetings on SMC website.
- Track number of watershed committee meetings conducted.
- Establish watershed planning committees for each new watershed planning effort.

B.6 Program Involvement

Consistent with Lake County's comprehensive, countywide approach to stormwater management, SMC serves as a Qualifying Local Program (QLP) for all Lake County MS4s. In this role, in 2002, SMC proactively formed the Municipal Advisory Committee (MAC) to provide a forum for representatives of local MS4s, which include municipalities, townships, and drainage districts, to discuss, among other topics, the implementation of IEPA's NPDES Stormwater Program. SMC will continue to facilitate quarterly MAC meetings and will continue to provide general support to Lake County MS4s as they continue to develop and implement their stormwater management programs. SMC will prepare an annual report on its stormwater management activities and will provide guidance to Lake County MS4s in preparing their own annual reports.

Measurable Goal(s):

- Track number of MAC meetings conducted.
- Prepare annual report template for use by Lake County MS4s including a description of the Qualifying Local Program stormwater management activities.

- Prepare/maintain SMPP template for use by Lake County MS4s in creating their own SMPP.

C. Illicit Discharge Detection and Elimination

SMC will continue to support Lake County MS4s in the development and implementation of their stormwater management programs by performing activities related to the Illicit Discharge Detection and Elimination minimum control measure, as described below. Note, however, that the primary responsibility for the implementation of the Illicit Discharge Detection and Elimination minimum control measure lies with the MS4.

Measurable Goal(s):

- Continue to make available information regarding prioritization of outfalls for illicit discharge screening activities.
- Continue to make available compiled GIS data related to the County’s existing stormwater infrastructure (e.g. storm sewer atlases, stream inventories and detention basin inventories).

C.2 Regulatory Control Program

SMC provides local MS4s with model and example illicit discharge ordinances that prohibit all non-stormwater discharges, including illegal dumping, to the storm sewer system. Additionally, the WDO includes provisions that prohibit illicit discharges to the storm sewer system during construction (i.e., prior to final site stabilization) on development sites.

Measurable Goal(s):

- Provide model and example illicit discharge ordinances to Lake County MS4s.
- Continue to administer and enforce the WDO.

C.10 Other Illicit Discharge Controls

SMC regularly sponsors and co-sponsors educational and technical training workshops on a variety of stormwater management-related topics.

Measurable Goal(s):

- Sponsor or co-sponsor and track the number of attendees at an Illicit Discharge Detection and Elimination workshop or other training workshop related to IEPA’s NPDES Stormwater Program.
- Distribute informational materials about the hazards of illicit discharges and illegal dumping from “take away” rack at SMC and SMC website.

D. Construction Site Runoff Control

Lake County has adopted a countywide Watershed Development Ordinance (WDO) that establishes the minimum stormwater management requirements for development in Lake County, including requirements for construction site runoff control.

D.1 Regulatory Control Program

The WDO is the regulatory mechanism that requires the use of soil erosion and sediment controls on development sites throughout Lake County. SMC has also created a Designated Erosion Control Inspector (DECI) program, a program designed to closely mirror the inspection requirements of IEPA's General NPDES Permit No. ILR10.

Measurable Goal(s):

- Continue to administer and enforce the WDO.
- Continue to administer the Designated Erosion Control Inspector (DECI) program outlined by the WDO.

D.2 Erosion and Sediment Control BMPs

§600 of the WDO specifies the soil erosion and sediment control measures that must be used in conjunction with any land disturbing activities conducted on a development site. SMC has maintains technical guidance documents to accompany the WDO.

Measurable Goal(s):

- Continue to administer and enforce the WDO.
- Continue to maintain technical guidance documents.

D.3 Other Waste Control Program

The WDO includes several provisions that address illicit discharges generated by construction sites. The applicant is required to prohibit the dumping, depositing, dropping, throwing, discarding or leaving of litter and construction material and all other illicit discharges from entering the stormwater management system.

Measurable Goal(s):

- Continue to administer and enforce the provisions of the WDO related to the control of waste and debris during construction on development sites.

D.4 Site Plan Review Procedures

A community's designated enforcement officer is responsible for reviewing and permitting development plans and for administering and enforcing the provision of the WDO. Within certified communities the responsibility lies with the MS4; within non-certified communities the designated enforcement officer is SMC's chief engineer. SMC administers this enforcement officer program, providing training on an as-needed basis to all enforcement officers to assist them in passing the exam, and maintains an up-to-date list identifying each community's designated enforcement officer. In addition to administering the enforcement officer program, SMC periodically reviews each community's WDO administration and enforcement records, using the results of such review to evaluate the performance of certified communities and designated enforcement officers.

Measurable Goal(s):

- Administer the Enforcement Officer (EO) program outlined by the WDO.
- Maintain an up-to-date list identifying each community's designated enforcement officer. (url:<https://lakecountyil.gov/2467/Enforcement-Officers>)
- Periodically review each community's WDO administration and enforcement records. Re-Certification Procedure. url: (url:<https://lakecountyil.gov/DocumentCenter/Home/View/4244>)
- Continue to maintain technical guidance documents.

D.5 Public Information Handling Procedures

SMC provides a number of opportunities for the receipt and consideration of information submitted by the public.

Measurable Goal(s):

- Document and track the number of soil erosion and sediment control-related complaints received and processed by SMC.

D.6 Site Inspection/Enforcement Procedures

Article 11 of the WDO contains both recommended and minimum requirements for the inspection of development sites. Within certified communities, the community's designated enforcement officer is responsible for conducting these inspections; within certified communities, SMC's chief engineer is responsible for conducting these inspections. Article 12 of the WDO specifies the legal actions that may be taken and the penalties that may be imposed if the provisions of the WDO are violated

Measurable Goal(s):

- Document and track the number of site inspections conducted by SMC.

E. Post-Construction Runoff Control

As described above, Lake County has adopted a countywide Watershed Development Ordinance (WDO) that establishes the minimum stormwater management requirements for development in Lake County, including requirements for post-construction runoff control.

E.2 Regulatory Control Program

Proposed stormwater management strategies must address the runoff volume reduction requirements described in §503 of the WDO and must include appropriate stormwater BMPs to address the other applicable post-construction runoff control requirements of the WDO.

Measurable Goal(s):

- Continue to administer and enforce the WDO.

E.3 Long Term O&M Procedures

§401 of the WDO requires that maintenance plans be developed for all stormwater management systems and, §500 further details deed or plat restriction requirements for all stormwater management systems.

Measurable Goal(s):

- Continue to administer and enforce the WDO.

E.4 Pre-Construction Review of BMP Designs

As described above, a community's designated enforcement officer is responsible for reviewing and permitting development plans and for administering and enforcing the provisions of the WDO. This includes a review of the stormwater BMPs that will be used to meet the post-construction runoff control requirements of the WDO and adherence to the Runoff Volume Reduction standards of §503.

Measurable Goal(s):

- Continue to administer and enforce the WDO.

E.5 Site Inspections During Construction

As described above in MCM D.6 Article 11 of the WDO contains both recommended and minimum requirements for the inspection of development sites.

Measurable Goal(s):

- Continue to administer and enforce the WDO.

E.6 Post-Construction Inspections

SMC has collaborated on a number of watershed based plans throughout the County. These watershed plans included a stream and detention basin inventories. The plans also include a list of site specific best management practices within various communities based on an assessment of these inventories and other data. SMC is currently developing an application to assist communities in identifying potential project sites, recommended in adopted watershed plans, within their jurisdictional boundaries.

Measurable Goal(s):

- Continue to administer and enforce the WDO.
- Develop an application, for use by MS4s, to identify adopted watershed plan recommendations within their communities.

E.7 Other Post-Construction Runoff Controls

Through the Watershed Management Board (WMB), SMC provides partial funding for flood damage reduction and surface water quality improvement projects. The WMB, which includes representatives from the Lake Michigan, North Branch of the Chicago River, Fox River, and Des Plaines River watersheds, meets annually to review potential projects and to make recommendations on stormwater BMP project funding. Members of the WMB include chief municipal elected officials, township supervisors, drainage district chairmen, and county board members from each district found within each of

Lake County's four major watersheds. The goal of the WMB program is to maximize opportunities for local units of government and other groups to have input and influence on the solutions used to address local stormwater management problems. Previous WMB-funded projects have reduced flooding, improved surface water quality, and enhanced existing stormwater management facilities throughout Lake County.

Measurable Goal(s):

- Conduct annual WMB meeting.
- Contribute funding to flood damage reduction and water quality improvement projects through the WMB.

URL: <http://www.lakecountyil.gov/3635/Watershed-Management-Board-WMB>

F. Pollution Prevention/Good Housekeeping

SMC will continue to support Lake County MS4s in the development and implementation of their stormwater management programs by performing activities related to the Pollution Prevention/Good Housekeeping minimum control measure, as described below. Note, however, that the primary responsibility for the implementation of the Pollution Prevention/Good Housekeeping minimum control measure lies with the MS4.

F.1 Employee Training Program

SMC will assist Lake County MS4s with the development and implementation of their employee training programs by maintaining a list of known employee training resources and opportunities, making available a software-based employee training program, and providing technical assistance to local MS4s. In addition, each year, SMC will sponsor or co-sponsor training workshops.

Measurable Goal(s):

- Maintain a list of known employee training resources and opportunities.
- Make available the Excal Visual Storm Watch: Municipal Storm Water Pollution Prevention software-based employee training program.
- Sponsor or co-sponsor a training workshop related to pollution prevention/good housekeeping or other training workshop related to IEPA's NPDES Stormwater Program.

F.5 Flood Management/Assess Guidelines

In working toward meeting its primary goals of flood damage reduction and surface water quality improvement, SMC follows a set of stormwater management policies that were created to define its roles and responsibilities for stormwater management in Lake County. One of these policies is to integrate multi-objective opportunities (e.g., flood damage reduction, surface water quality improvement, environmental enhancement) into SMC-sponsored projects. In accordance with this policy, SMC will evaluate all SMC-sponsored projects for multi-objective opportunities.

Measurable Goal(s):

- Track number of SMC-sponsored projects that are reviewed for multi-objective opportunity.

F.6 Other Municipal Operations Controls

SMC develops and distributes chloride reduction documents and materials. Each year, SMC will sponsor or co-sponsor at least one workshop on a topic related to winter de-icing. Lake County also publishes a “Lake County Winter Maintenance Preferred Providers” list. Providers included on this list have successfully completed a Lake County Deicing Training Workshop and passes the associated course exam.

Measurable Goal(s):

- Advise MS4 communities of watershed groups addressing issues associated with the use of chlorides (i.e. road salt).
- Sponsor or co-sponsor at least one workshop on a topic related to winter de-icing.
- Make available chloride reduction documents on take-away racks and the website.

Part E5. QLP Construction Projects Conducted During Year 14

Project Name	Project Size (acres)	Construction Start Date	Construction End Date
Bull Creek Restoration Project - Beach Park, IL	1.87	5/2016	11/2017
Strawberry Condo Drainage Improvements – North Chicago, IL	0.25	6/2016	10/2016
Floodplain Home Buyout - FMA FY14, 98 Keystone Dr., Fox Lake, IL	0.22	8/1/2016	8/31/2016
Floodplain Home Buyout - FMA FY15, 37 Medinah, Fox Lake, IL	0.15	8/1/2016	8/31/2016
Floodplain Home Buyout - HMGP 1935, 103 Lindenhurst, Lindenhurst, IL	0.21	10/15/2016	10/31/2016
Floodplain Home Buyout - HMGP 1935, 105 Lindenhurst, Lindenhurst, IL	0.26	10/15/2016	10/31/2016
Floodplain Home Buyout - HMGP 1935, 109 Lindenhurst, Lindenhurst, IL	0.53	10/15/2016	10/31/2016
Floodplain Home Buyout - HMGP 1935, 2000 Old Elm, Lindenhurst, IL	0.26	10/15/2016	10/31/2016
Floodplain Home Buyout - HMGP 1935, 2002 Old Elm, Lindenhurst, IL	0.25	10/15/2016	10/31/2016
Floodplain Home Buyout - HMGP 4116, 24655 River Shore, Cary, IL	0.44	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 24762 N. Lagoon, Cary, IL	0.54	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 1018 Kilbourne Rd, Gurnee, IL	0.42	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 1001 Kilbourne Rd, Gurnee, IL	2.03	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 26970 N. Grace, Wauconda, IL	0.22	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 200 Park, Ingleside, IL	0.22	9/1/2016	9/30/2016
Floodplain Home Buyout - HMGP 4116, 26195 W. Mattalina, Ingleside, IL	0.45	9/1/2016	9/30/2016

